AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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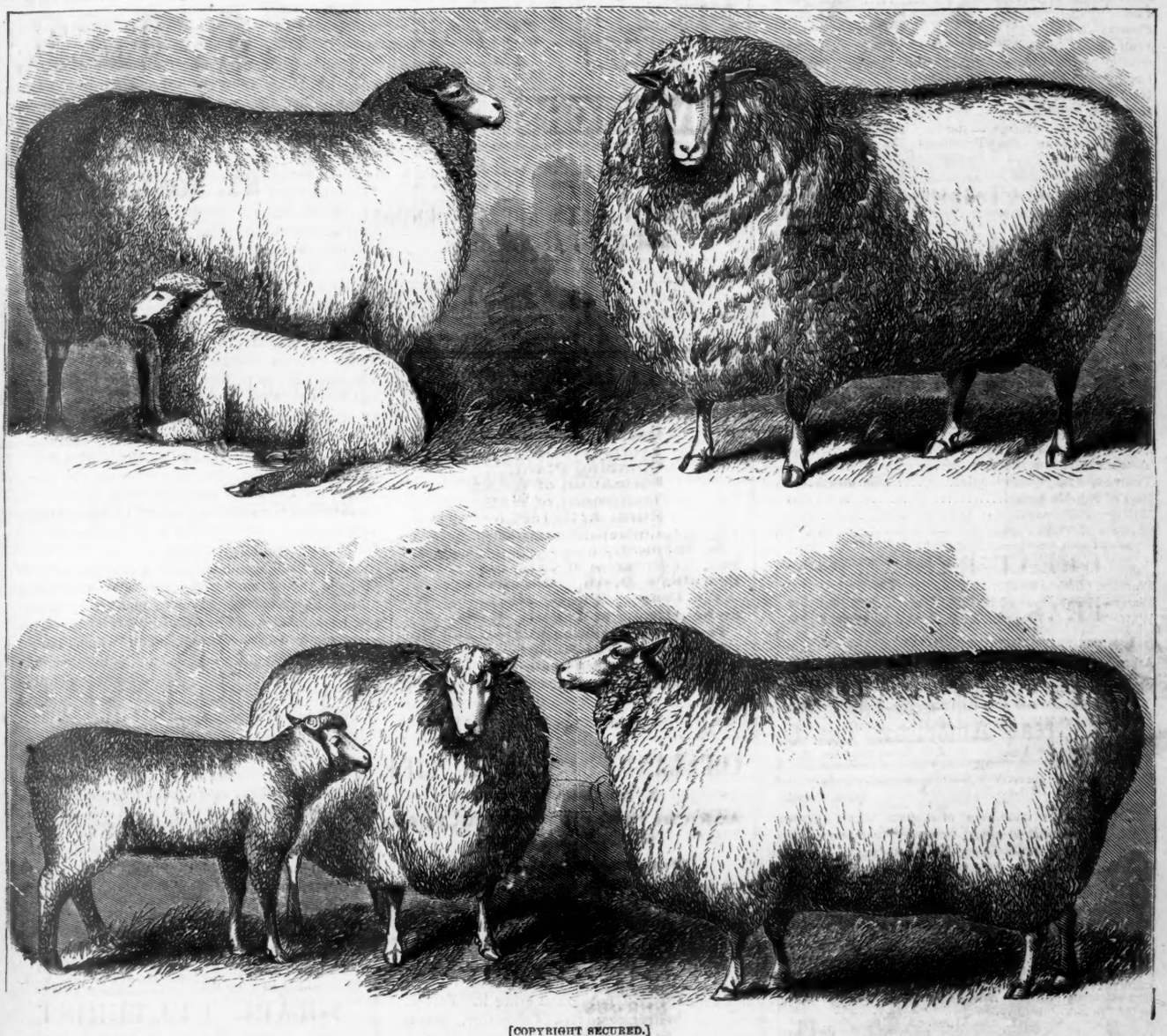

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THE MAPLE-SHADE COTSWOLDS IN THEIR FLEECES.—Drawn from Life by E. FORBES.—*Engraved for the American Agriculturist.*

Our readers will call to mind a picture we presented of this flock in October of last year, and it would be well for them to refer to that number of the *Agriculturist*. There, they were shown as they appeared soon after shearing—the wool being perhaps an inch long. Shortly after this engraving appeared, the entire flock was purchased by one of the proprietors of the *American Agriculturist*, as was previously noticed. It has had the best of care, and being in fine condition this spring, several of the animals stood for their likeness to Mr. Forbes, who has succeeded in presenting us beautiful and accurate pictures. The portraits now given show the animals just before shearing, covered with their long, silky fleeces, the staple of which varies from 10 to 14 inches in length. The change in the appearance of the sheep is very striking; and the two pictures exhibit the excellencies of long-wool mutton sheep very satisfactorily. We see in the one the real "Shorthorn carcass"—long, deep, broad, compact, with nothing superfluous,—nothing, which is not either essential to the sheep's well-being, or profitable to the butcher. In the other, the one now shown, we see the immense fleeces of valuable wool which they carry, and the noble lambs which they bear, and which are a source of such great profit in the spring. The above pictures were taken late in April, just before the shearing, which took place early in May. Such wool, unwashed, is quoted in the open market at 40 to 45 cts.; and grade Cotswold lambs sell in April and May for 20 to 25 cts. per pound on their feet, netting their breeders often over $10 a head. Now-a-days certainly no sheep are more profitable, or better worthy, either the attention of the breeder of thorough-bred stock, or of the farmer who raises mutton and lambs for the market.

Contents for August, 1870.

Achyranthes Lindenii....803
After Haying....293
Bee Notes—By M. Quinby....289
Bowman's Root, or Indian Physic....*Illustrated*..301
Boys and Girls' Columns.—The Latest Street Toy—Among the Spice Islands—About Puzzles and Rebuses—A Snake Levee—The Book of Life—Going into the Country—Taken at his Word—Answers.... 2 *Illustrations*..307-308
Camellias in Window Culture....302
Cotswold Sheep in their Fleeces....*Illustrated*. 281
Cows—How often do they Drink?....2 *Illustrations*..296
Cranberry Culture.... 3 *Illustrations*..302
Crimson Clover....*Illustrated*..297
Currants....301
Farm Work in August....282
Field Culture of Sage....303
Flower Garden and Lawn in August....283
Flowers—A Native Crinum....*Illustrated*..303
Fruit Garden in August....283
Grazing Mutton Sheep....299
Green-house and Window Plants in August....284
Harvesting Pea-nuts....289
Horse Papers for Farmers—No. 7....290
Household Department.—Bottling and Corking—About Keeping Cool—Poisonous Hair-Dyes and Cosmetics—Cooking Tomatoes—Graham Mush—How to use Canaille—Hints on Cooking, etc.... 6 *Illustrations*..305-306
House—Plans for one Costing $2,200 to $3,000..4 *Illus*..288
Kitchen Garden in August....283
Left-handed Plows....299
Market Reports....284
Mezquit Tree....*Illustrated*..301
Ogden Farm Papers.—No. 8—The Corn Crop—Soiling—Milk Record—Deep and Shallow Plowing—High price of Jersey Cattle—Mare Failing to get with Foal....291-292
Orchard and Nursery in August....283
Realizing an Ideal....299
Returning from the Hunt....*Illustrated*..300
Rye Crop—Its Profitableness....297
Sea-Otter....*Illustrated*..293
Stocking Large Ponds with Fish....298
Strawberries—Notes on New Varieties..4 *Illustrations*..304
Sulphur for Mildew....303
Tobacco in August....289
Twelve-spotted Squash Beetle....*Illustrated*..302
Uses of Salt-Marsh Sod....298
Vitality and Propagation of the Scab-Mite....298
Walks and Talks on the Farm—No. 80—Advice to a young Tennesseean—An Englishman's Experience—Farming is Hard Work—Lawes & Gilbert's Experiments in Sheep Feeding....294-296
Warbles, (*Œstrus bovis*)....2 *Illustrations*..296
Water—Management of Flowing Water....3 *Illus*..297
White Whale, or Beluga....*Illustrated*..293

INDEX TO "BASKET" OR SMALLER ARTICLES.

Arbor Vitæ....285
Artists....286
Ashes vs. Guano....287
August Butter....287
Budding....286
Cabbages, Am. & Foreign....286
Cabbage Trouble....287
Characteristics of Amer. Horticulture....285
Churns....287
Colorado Potato Beetle..287
Constitution of Ag'l and Hort'l Societies....287
Cows Holding up Milk..287
Cranberries upon Upland....287
Crops in Illinois....285
Destroying Persimmons..287
Fairs....285
Fallen Apples....287
Fine Hollyhocks....286
Fleas upon Dogs....287
Forcing Asparagus....286
Four-leaved Clover....285
Geranium Sporting....285
Herstine's Raspberries..286
Implement Trial....284
Importation of Animals..286
Industrial Exhibition....287
Is Red Clover Poison?..289
Labor from Castle Gard'n..287
Large Box-tree....286
Meehan's Nursery....286
Mice or Moles?....287
Minks....287
Money, How to Remit..284
Mr. Dreer's Establishm't..285
New York Papers....286
N. Y. State Fair....285
N. Y. State Poultry Soc..286
Oats Cured as Hay....287
Old Seeds....285
Onion Seed....285
Patented Articles....286
Pear Blight....285
Plants Named....285
Pomologists in Cal....285
Potatoes from Seed....287
Pres't Wilder Strawberry..285
Purification of Cisterns..287
Self-milking Cows....287
Slugs and Striped Bugs..286
Spurrey....287
Sundry Humbugs....285
Superphosphate Recipe..287
Swamp Meadow Parings..289
Tan for Hot-beds....285
The Season & the Crops..284
Tobacco in Conn....287
Turnip Fly....287
Vinegar Making....287
What Shall he Plant?....286
Wild Lilies....285

Back Volumes Supplied.—The back volumes of the *Agriculturist* are very valuable. They contain information upon every topic connected with rural life, out-door and in-door, and the last thirteen volumes make up a very complete library. Each volume has a full index for ready reference to any desired topic. We have on hand, and print from electrotype plates as wanted, all the numbers and volumes for thirteen years past, beginning with 1857—that is, Vol. 16 to Vol. 28, inclusive. Any of these volumes sent complete (in numbers) at $1.75 each, post-paid, (or $1.50 if taken at the office). The volumes, neatly bound, are supplied for $2 each, or $2.50 if to be sent by mail. Any single numbers of the past thirteen years will be supplied, post-paid, for 15 cents each.

Calendar for August.

Day of Month.	Day of Week.	Boston, N England, N. York State, Michigan, Wisconsin, Iowa, and Oregon. Sun rises.	Sun sets.	Mo'n sets.	N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois. Sun rises.	Sun sets.	Mo'n sets.	Washington, Maryland, Virginia, Kentucky, Missouri, and California. Sun rises.	Sun sets.	Mo'n sets.
		H.M	H.M	H. M.	H.M	H.M	H. M.	H.M	H.M	H. M.
1	M	4 52	7 20	10 8	4 56	7 16	10 7	5 0	7 11	10 7
2	T	4 53	7 18	10 35	4 57	7 14	10 36	5 1	7 10	10 36
3	W	4 54	7 17	11 8	4 58	7 13	11 10	5 2	7 9	11 12
4	T	4 55	7 16	11 42	4 59	7 12	11 45	5 3	7 8	11 48
5	F	4 56	7 15	morn	5 0	7 11	morn	5 4	7 7	morn
6	S	4 57	7 14	0 20	5 1	7 10	0 24	5 5	7 6	0 29
7	S	4 58	7 12	1 05	5 3	7 9	1 10	5 6	7 5	1 15
8	M	4 59	7 11	1 57	5 3	7 7	2 2	5 6	7 4	2 8
9	T	5 0	7 10	2 57	5 4	7 6	3 2	5 7	7 2	3 7
10	W	5 1	7 8	rises	5 5	7 5	rises	5 8	7 1	rises
11	T	5 2	7 7	7 36	5 6	7 4	7 33	5 9	7 0	7 29
12	F	5 3	7 6	8 9	5 7	7 2	8 6	5 10	6 59	8 4
13	S	5 4	7 4	8 35	5 8	7 1	8 34	5 11	6 58	8 32
14	S	5 5	7 3	9 1	5 9	7 0	9 0	5 12	6 56	9 0
15	M	5 6	7 1	9 36	5 10	6 58	9 26	5 13	6 54	9 27
16	T	5 7	7 0	9 50	5 11	6 57	9 52	5 14	6 53	9 53
17	W	5 8	6 58	10 17	5 12	6 55	10 19	5 15	6 52	10 22
18	T	5 10	6 57	10 46	5 13	6 54	10 49	5 16	6 51	10 53
19	F	5 11	6 55	11 19	5 14	6 53	11 23	5 17	6 50	11 27
20	S	5 12	6 54	11 57	5 15	6 51	morn	5 17	6 48	morn
21	S	5 13	6 52	morn	5 16	6 50	0 2	5 18	6 47	0 7
22	M	5 14	6 51	0 42	5 17	6 48	0 47	5 19	6 45	0 52
23	T	5 15	6 49	1 33	5 17	6 47	1 38	5 20	6 44	1 44
24	W	5 16	6 48	2 33	5 18	6 45	2 38	5 21	6 43	2 43
25	T	5 17	6 46	3 38	5 19	6 44	3 42	5 22	6 41	3 47
26	F	5 18	6 44	sets	5 20	6 42	sets	5 23	6 40	sets
27	S	5 19	6 43	7 35	5 21	6 41	7 33	5 24	6 38	7 31
28	S	5 20	6 41	8 7	5 22	6 39	8 6	5 25	6 37	8 6
29	M	5 21	6 39	8 38	5 23	6 37	8 39	5 26	6 35	8 39
30	T	5 22	6 38	9 9	5 24	6 36	9 11	5 26	6 34	9 13
31	W	5 23	6 36	9 43	5 25	6 34	9 46	5 27	6 32	9 49

PHASES OF THE MOON

MOON.	D.	BOSTON. H. M.	N. YORK. H. M.	WASH'N. H. M.	CHA'STON H. M.	CHICAGO. H. M.
1st Quart..	4	4 7 m.	3 55 m.	3 43 m.	3 31 m.	3 1 m.
Full.....	11	4 29 m.	4 17 m.	4 5 m.	3 53 m.	3 23 m.
3d Quart...	19	3 6 m.	2 54 m.	2 42 m.	2 31 m.	2 1 m.
New Moon	23	4 41 ev.	4 29 ev.	4 17 ev.	4 5 ev.	3 35 ev.

AMERICAN AGRICULTURIST.

NEW YORK, AUGUST, 1870.

Relief from the hardest of the summer labor and care comes to almost every farmer in August. After spring grains are harvested, and the buckwheat and turnips are sown, and the latter hoed and thinned out, and the early apples are marketed, and preparations are made for winter wheat, though still there is work enough for his men and teams, he has time to draw a long breath and look about a little. Even the farmer may take his family for a visit to a neighboring county, to the springs, or to the sea-side; and some are wise enough to do it. The good it does cannot be measured. If it took every cent of the profits of the entire year it would often pay. Who knows when this incessant drive and worry, which seems to be the very life of many farmers, and into which they inconsiderately force their poor, work-worn partners, will end in a fit of sickness or in the quiet of the church-yard? Better rest, and enjoy life a little, now and then.—You will enjoy the final rest as well, and add essentially to the grand sum total of human happiness.

Hints about Work.

Buckwheat.—If any is to be sown so late as this, it should be put in at once. Excellent crops are often raised, but there is considerable risk of early frost. However, taking one year with another, it is generally successful; and the finest, plumpest grain in our experience fills during the cool nights which threaten frost but do not bring it. Farther south there is little or no risk of this sort. Buckwheat for green manure will make a good growth, sown as late as the 15th.

Turnips.—Quick growing varieties, known as Common, English, or Sweet turnips, may be sown up to the 10th, and will give good returns, especially if in drills, with a little superphosphate or bone-dust sown upon them. If the crop is put in in a small way, mark out the land, sow the seed, 1 pound to the acre, cover very lightly and sow 150 to 200 pounds of superphosphate of lime upon the drill either by hand or with the seed drill. If the seed drill be used, the manure must be sifted through a coarse sieve. It is, as a rule, too late for Ruta-bagas to do anything.

Tobacco.—This season is a critical one with the tobacco plant, and special care is required in topping and worming, and great injury often comes from hail or high winds, which cannot be guarded against. See article on page 289, on *Tobacco*.

Root Crops may be hoed and thinned where necessary. At all events, keep the weeds down and the ground mellow. A one-horse subsoil plow run between the rows of carrots, mangels, ruta-bagas, and parsnips, is often of great service in loosening the ground, admitting air and moisture.

Corn Fodder.—It is important when corn, sown for fodder, gets its full growth, and is sweet, succulent, and tender, that it should be cut and cured before it gets the toughness which comes on after the ears begin to fill; bind in small bundles, and stook.

Winter Wheat.—The preparation of the land for winter wheat was discussed in the "Hints about Work," for July, and this covered a good deal to be done in August. If wheat follows spring oats or barley, either plow shallow and work the surface with harrows or cultivators to keep it loose, and to kill the weeds, and plow in a dressing of good, fine compost, just before sowing in September, or plow in a dressing of manure of a little coarser character, as soon as the oats or barley are off. Work the surface over to kill weeds and make it mellow, two or three times, according to the weather, and drill in the seed without plowing again. Wheat may be sown the last week in August, in many localities, with the best results; but it is usually best to give a little more time to the tillage, and not to sow before September. There is a very great difference in land, and the same treatment will not do for all; but any land that will bear a crop of weeds will stand a good deal of surface tillage. The small grains require manure near the surface, and deep plowing is rarely desirable; and hence the great value of Shares' harrow, which acts like a series of little plows each turning a neat furrow.

Grain and Hay Stacks and Protection.—It is better to put hay and grain under a roof than to make stacks, but those who have not room in the barns must stack their crops. Stacks will settle, however well built, and rarely settle evenly. We like the Dutch four-post barrack with its thatched or board roof, very well, though heavy and cumbrous. It protects the contents sufficiently, and may be put up in a hurry. The system of making long, narrow heaps, and setting crotched posts at the sides with poles between them, upon which 13-foot boards may be laid to make a roof, is not so good; for the center of the roof needs support which it is difficult to give, and the hay, etc., is more exposed on one side. If a permanent roof is to be made it is best to give it a double pitch.

Straw.—The great and increasing value of straw at the East, and wherever paper is made, is leading farmers at the West more and more to save it in better order. Powerful presses will put a ton of straw into as small bulk as is desirable for railroad transportation; that is, it is found to be undesirable to put more than 10 to 12 tons in a common freight car, and one will hold this quantity of hard-pressed hay or straw.

Top-dressing Grass.—Sow grass and clover seed where the sward is thin through winter-killing or burning, and put on as liberal a top-dressing of good compost or tolerably well-rotted yard manure as you can afford. We hardly dare to set a limit to the profitable application of manure to the grass crop. With manure enough we do not doubt a heavy crop might be cut in June, August, and October, where now we cut but once. After-math hay, or rowen, is rarely or never cut on most farms, so far as our observation goes.

Irrigation.—Whoever has brooks or springs which may be led in small streams over grass land, ought not to neglect doing it. One properly irrigated acre is worth two or three dry acres; and the art of thorough irrigation and the best way to manage the water is easily learned.

Work in the Swamps.—Ditching so that muck may be got at, clearing swamp land, and similar work can often be done during the hight of the dry weather of summer, when men and teams can go

upon the ground. Burning of the surface of swamps is frequently very useful; but fires set in dry, mossy peat bogs by intention or accident, often get beyond control, and consume much more than the loose surface, running among timber and fences, and holding fire a long time.

Litter from the Swamp.—Brakes, with swamp grasses and sedges may often be cut to the extent of several tons to the acre; and if stored where they will not get soaked by the rains, will make very good litter for the barn-yard, cow-shed, or for the stables, and hog-pens. Some of the more succulent kinds rot rapidly if not well dried and protected; but all the sedges which constitute most of what is called swamp grass, require little drying, and will lie months in cocks simply, without decaying. This kind of hay makes first-rate stack bottoms, and good topping for that which is more liable to hurt by weathering, if not protected.

Compost Heaps.—While the warm weather lasts, and other more important work is not pressing, make compost heaps; laying up manure from the hog-pens with weeds, sods, etc., from the fence rows, freshly mown reeds, brakes, and swamp-grass. Compost makes very fast with a little good manure as a basis, and the quantity may be increased six-fold in a few months. Where no manure is at hand, use lime or ashes, sprinkled upon layers of dry muck and any vegetable matter. Dead animals are an admirable addition to such composts, and if used, the heap should be covered with soil.

Compost for Pastures.—Top-dressing old pastures with a compost made of such vegetable or peaty matter as can be collected in the vicinity, with lime, to which is added as much bone-dust as one can afford, thoroughly worked over and mixed, spread and harrowed in, will make a wonderful difference in the yield of grass.

Working Oxen are ill adapted to severe labor during the hottest part of the day, but if put to the hardest work in early morning, and after the heat of the day is passed, they will be capable of doing a great deal without falling off in flesh. Hired men will gladly accede to a proposition to break their day's labor by a three-hours' nooning and rest.

Horses should be kept stabled by day where good ventilation and comparative darkness give them comfort. They may be turned out to feed at night when the blood-sucking flies and gad-flies will not torment them.

Cows should have a liberal supply of green fodder if their pasturage is dry or short. Change from one pasture to another as often as they become restless, and thus keep them contented and give the grass a chance to start. Grass fodder should be cut and allowed to wilt, but not allowed to dry nor heat before feeding.

Calves and Colts should be weaned at four or five months old. This must be done gradually by separating them from the dams for half a day at a time, and giving them grass or cut hay with a little oil-meal and ground oats upon it. Gradually prolong the period of separation, and shorten the time they are together in the case of colts, and so gradually dry off the mare. With calves, the best plan is to steal the milk, leaving them very little, and so gradually forcing them to depend upon other sources of supply.

Sheep and Lambs.—The separation and weaning of the lambs occur more abruptly. Big lambs exhaust the ewes greatly, and should be separated from their dams early enough for the ewes to recuperate thoroughly before the breeding season. This is done by removing them at once to good pasturage out of hearing of the ewes, while these are left upon rather short feed for a few days. The deep milkers may be in danger of having their bags cake and swell, and must be watched and have the milk drawn if the bags feel hot and feverish or much distended.

Work in the Horticultural Departments.

If the horticulturist ever has any leisure, excepting in winter, it is in August, when, if the weeds and insects are under fair subjection, he may await the coming harvest without feeling the constant pressure of work that drives him during other months. Still there is a plenty to do, and we give such notes as seem timely.

Orchard and Nursery.

Marketing.—The early fruits will now be coming, and will need attention if sent to market. Apples and pears should be picked when fully matured, but before they begin to mellow. Recollect—what has been so often repeated—it does not pay to send poor fruit to market. It costs as much for freight and packages for poor stuff as it does for good. Superior fruit will always sell, no matter if it is a season of plenty. In such seasons it is difficult to dispose of an indifferent or a poor article in our city markets at any price. Assort the fruit.

Peaches are to be picked in just that condition of ripeness in which they are firm enough to endure transportation, and will be in eating condition by the time they reach the consumer. If too hard, they will fail to ripen up properly, and if too soft, they will bruise in the carriage. Experienced pickers soon learn to recognize the proper condition by the appearance of the fruit, without subjecting it to the test of touch. Crates are becoming each year more popular for packing peaches. Directions for making them were given last month on page 263.

Thinning should have been done before; but few thin the fruit sufficiently at the first going over, and it is better to look over the trees again and remove inferior specimens.

Insects are to be watched. As soon as the nests of the fall web-worm appear, destroy them. This month the red spider is often troublesome, not only on fruit-trees, but on ornamental ones. It shows itself by a browning of the leaves; and a close examination will detect the minute, red pest. Frequent syringings with soap suds, or even clear water, will dislodge it, if persisted in.

Budding.—The time to bud is when the bark of the stock will "run," or part readily from the wood, and well-formed buds of the same season's growth can be procured. The maturing of the buds may be hastened by pinching the end of the shoot. When sticks of buds are cut, the blade of the leaf should be cut off, leaving the leaf-stalk attached to the twig. Keep the twigs moist until they are used.

Fruit Garden.

Thinning the Fruit is easily performed upon dwarf trees, and such should never produce other than fine specimens. The trees are so small that they can be petted and cared for in a manner not practicable with standards.

Strawberries.—Beds may be set by the use of potted runners; directions for making were given last month on page 264. Keep the runners cut off from vines grown in hill culture. A dressing of guano or ashes just before a rain will help the plants.

Blackberries and Raspberries.—The new growth should not be allowed to reach higher than 5 feet; some stop as low as 4 feet. The tender point is pinched out, or a knife is used. This stopping of the growth causes the side shoots to push, and these are in turn pinched when they are 18 inches long. Keep all suckers hoed down, and when the fruit is off, remove the canes that have borne.

Black Caps differ in their manner of growth from ordinary raspberries; they do not throw up suckers from the root, but multiply by rooting at the ends of the canes, which naturally bend down and touch the earth. If it is not desired to propagate plants, the new growth is pinched at the hight of about 30 inches, which causes lateral shoots to push.

Grapes.—After the first appearance of mildew there is no time to be lost in applying sulphur. Grayish patches on the fruit stems or upon the leaves call for an immediate and thorough dusting with sulphur. See article on page 303. Go over the vines and hand-pick beetles and caterpillars; keep the new growth tied up and pinch the laterals back to one leaf as often as they push.

Kitchen Garden.

Beans, if desired for salting or pickling, may be sown and will give a supply of green pods.

Cabbages and *Cauliflowers.*—Give thorough culture, using the hoe frequently. If any are disposed to be slow, give a dressing of guano or hen manure. Lime or salt is used for destroying slugs.

Carrots.—Thin the late sowings and keep cultivating until the tops are so large as to prevent.

Celery.—Keep the soil well stirred and free from weeds. Plants for a late crop may yet be set.

Corn.—Those who save their own seed should select the earliest and best formed ears for the purpose. It is very easy to keep the variety improving, and it is equally easy to deteriorate it by taking the leavings of the crop for seed.

Cucumbers.—Save the finest and earliest for seed. Pick for small pickles every day.

Egg-Plants.—Continue to forward them by cultivation and manuring. The "Tomato-worm" will often attack the plants and do much mischief.

Endive.—Set out the plants a foot apart each way in rich ground; cultivate well to induce a rapid growth. They may be blanched by tying, covering with a flower-pot, or by laying a board upon them. The operations should be performed only when the plants are quite dry.

Melons.—Remove such fruit as will not ripen before frost. In saving seeds select the earliest, and those grown at a distance from any other variety.

Onions are ready to harvest when the tops lose their stiffness and fall over to one side. When a good share have done this, the crop may be pulled. If the onions are to be stored, they should first be thoroughly dried and then spread in a cool loft where they will have ventilation.

Radishes.—Sow the winter sorts at the proper time for sowing round turnips. The Chinese Rose-colored Winter is the best, though some fancy the white and black.

Spinach, if sown in rich ground, will give a supply this fall. It is too early to put in the crop intended to keep over winter.

Squashes.—Continue to remove destructive insects from the vines. See note on page 302. When the vines root at the joints, do not disturb them.

Sweet Potatoes, whether in hills or upon ridges, must be kept free from weeds until the vines completely cover the ground. Do not allow the vines to take root, as they are apt to do when they come in contact with the soil; move them occasionally.

Tomatoes.—Those who have a choice variety should take pains to preserve and even improve its good quality. A dozen vines of the same variety planted side by side will show marked differences in earliness and productiveness, and in the shape and solidity of the fruit. By attending to these points and sacredly reserving the most desirable for seed, each grower can establish a style, if not a variety of tomato, that will suit his purposes. If training is practised, whatever form has been adopted should be faithfully followed up. Give the tomato-worm no quarter. If left to itself for a day it will make havoc. Its droppings seen upon the leaves or upon the ground are warnings to be heeded.

Turnips.—Dust the young plants with lime or a mixture of plaster and ashes, if insects trouble them.

Weeds.—Keep at them. Those cut up this month die quickly and are quite sure to stay dead.

Flower Garden and Lawn.

Lawns.—This is a trying month for new lawns; if, as is often the case, the green was produced in good part by annual grasses, these will die out, leaving brown and bare spots. Encourage the formation of a close turf by rolling after a rain, and by frequent mowing.

Edgings and *Margins* will require the use of the egding knife to keep them neat.

Bedding Plants.—See that they do not grow out of shape and get mixed. Most of them will require the use of the knife to keep them in shape.

Dahlias usually suffer at this season for want of water. They should be kept in a growing condition.

Roses.—To keep the ever-blooming sorts up to their name, as soon as the flowers drop, cut the stem back to a strong bud, and it will soon push new shoots and flower again.

Gladioluses.—Tie up those that need it; the flowers are so heavy that the stalk is frequently unable to support them.

Lilies will also need staking. Cut away the flower as soon as it fades, unless it is desired to save seed. Keep the foliage free from caterpillars, which are apt to attack them at this season. The future condition of the bulbs depends upon healthy foliage.

Chrysanthemums.—Bring into desired shape by pinching. Do not let them become crowded, or the lower leaves will decay. Tobacco water will kill lice; and the caterpillars, often so troublesome upon them, must be pinched off by hand.

Last Month we gave several hints upon general care and keeping, which are still timely.

Green-house and Window Plants.

The plants out of doors continue to need the care mentioned in last month's notes. The earlier repairs are made to the house, the better. When this and the heating apparatus are in good order early in the season, much hurry and confusion will be saved at the time of taking in the plants. Propagation by cuttings from plants out of doors can go on. It is well to partially sever or "tongue" the cuttings of geraniums and other very soft-stemmed plants before removing them entirely. The cut portion becomes callous while still upon the plant, and when removed is ready to strike root.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for the month ending July 13, 1870, and for the corresponding month last year.

1. TRANSACTIONS AT THE NEW YORK MARKETS.

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days *this* m'th	378,000	2,341,000	1,228,500	76,003	53,000	734,000
25 days *last* m'th	361,000	2,389,000	661,000	268,000	204,000	817,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days *this* m'th	283,000	4,237,000	1,568,000	109,000	13,500	1,411,000
25 days *last* m'th	267,000	2,988,500	1,137,000	78,000	40,000	1,228,000

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days 1870	378,000	2,341,000	1,228,500	76,000	53,000	734,000
24 days 1869	313,500	3,342,500	1,244,000	87,000	27,000	508,000
SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
25 days 1870	283,000	4,237,000	1,568,000	109,000	13,500	1,411,000
24 days 1869	416,000	4,247,000	2,113,000	65,000	——	1,194,000

3. *Exports from New York, Jan. 1 to July 13:*

	Flour.	*Wheat.*	*Corn.*	*Rye.*	*Barley.*	*Oats.*
1870	880,626	7,964,408	164,468	65,734	——	9,788
1869	605,950	6,260,268	1,481,849	68,536	——	42,257
1868	481,663	2,956,522	4,044,602	153,098	——	39,368

4. *Stock of grain in store at New York:*

1870.	*Wheat,* bush.	*Corn,* bush.	*Rye,* bush.	*Barley,* bush.	*Oats,* bush.	*Malt,* bush.
July 11	1,281,913	488,540	28,816	93,600	675,068	109,478
June 7	206,428	69,545	21,891	94,630	488,143	108,775
May 10	1,158,052	110,829	20,502	126,043	440,517	83,000
April 11	1,845,186	285,946	24,349	187,172	756,811	99,988
March 7	2,509,608	484,176	39,089	278,905	1,105,194	97,139
Feb. 11	2,902,638	534,003	62,112	322,425	1,199,672	36,214
Jan. 12	4,423,028	991,903	38,239	34,900	1,310,935	85,405
1869						
Dec. 11	3,810,562	833,909	51,043	285,906	1,386,594	77,097
Nov. 10	1,616,060	693,065	31,700	31,584	281,541	66,782
Oct. 11	978,273	445,068	34,467	5,948	120,950	67,094
Sept. 6	748,121	127,736	56,081	——	183,930	134,870
Aug. 9	634,382	258,155	78,297	371	50,219	105,458
July 10	581,457	328,613	71,418	2,967	259,985	97,177
June 7	657,577	385,241	107,546	383	535,993	109,746

5. *Receipts at head of tide-water at Albany each season to July 7th:*

	Flour, bbls.	*Wheat,* bush.	*Corn,* bush.	*Rye,* bush.	*Barley,* bush.	*Oats,* bush.
1870	105,700	5,071,000	509,000	260,600	82,400	818,200
1869	92,100	4,758,200	1,571,400	183,400	11,800	1,192,200
1868	97,400	4,529,400	5,379,500	159,400	338,400	3,446,100
1867	18,800	141,000	2,105,500	89,000	28,000	977,600
1866	72,900	1,097,900	6,098,700	230,700	76,702	2,757,300

Gold has been as high as 115¼ since our last, influenced by the war reports from the Continent of Europe. The latest advices to the 13th of July, gave promise of a continuance of peace. Gold thereupon receded to 112, leaving off on the 12th of July at 112⅝....Early in the month, the liberal receipts of Breadstuffs gave buyers the advantage as to price, yet the demand was not remarkably active, save for Wheat, which met with a pretty ready sale, largely for shipment. Toward the close, the rise in gold, under the war reports from Europe, strengthened the views of holders of Flour and Wheat, which, however, were not in urgent request at the advanced rates claimed, and the market wound up with less firmness. Corn closed quite heavily, for other than prime, dry parcels, received by rail, which were not plenty, and which were quoted comparatively steady. Rye and Barley were quite dull, and nearly nominal in price. Oats have been moderately active, but closed in favor of purchasers..... Cotton has again declined, under free offerings, and a moderate demand... The Provision market has been generally quiet; Mess Pork has been quoted lower.... Wool, which opened dull and heavy, closed with more steadiness, on a better inquiry....Hops have been moderately dealt in at essentially unchanged prices....Hay and Seeds have been less sought after at about former rates....The main business in Tobacco has been in Kentucky, which has been freely purchased, partly for export, within our range of quotations.

CURRENT WHOLESALE PRICES.

	June 13.	July 13.
PRICE OF GOLD	113¼	112⅝
FLOUR—Super to Extra State	$5 20 @ 6 40	$4 85 @ 6 35
Super to Extra Southern	6 25 @10 00	5 90 @ 9 75
Extra Western	5 60 @10 00	5 35 @ 9 75
Extra Genesee	6 50 @ 8 50	6 40 @ 8 25
Superfine Western	5 20 @ 5 50	4 85 @ 5 25
RYE FLOUR	4 60 @ 5 75	5 10 @ 6 30
CORN-MEAL	5 25 @ 5 75	5 20 @ 5 75
WHEAT—All kinds of White	1 50 @ 1 90	1 45 @ 1 90
All kinds of Red and Amber	1 10 @ 1 46	1 00 @ 1 50
CORN—Yellow	1 10 @ 1 25	1 07 @ 1 15
Mixed	93 @ 1 09	88 @ 1 07
OATS—Western	65 @ 71	62 @ 71½
State	70 @ 71	69 @ 72
Canada	63 @ 65	61 @ 66
RYE	1 05 @ 1 14	97 @ 1 12
BARLEY	Nominal.	67 @ 1 05
HAY—Bale ₱ 100 ℔	75 @ 1 05	70 @ 1 15
STRAW, ₱ 100 ℔	50 @ 1 05	50 @ 1 10
COTTON—Middlings, ₱ ℔	22 @ 22¾	20 @ 20¾
HOPS—Crop of 1869, ₱ ℔	12 @ 25	10 @ 25
FEATHERS—Live Geese, ₱ ℔	80 @ 85	80 @ 85
SEED—Clover, ₱ ℔	13½@ 14½	13½@ 14¼
Timothy, ₱ bushel	7 25 @ 7 75	7 00 @ 7 50
Flax, ₱ bushel	2 20 @ 2 25	2 30 @ 2 50
SUGAR—Brown, ₱ ℔	8¾@ 11¾	8½@ 11½
MOLASSES, Cuba, ₱ gal	22 @ 45	23 @ 42
COFFEE—Rio (Gold, in bond)	9¼@ 13	9¼@ 13
TOBACCO, Kentucky, &c., ₱ ℔	6 @ 13	6 @ 14
Seed Leaf, ₱ ℔	8 @ 70	6 @ 70
WOOL—Domestic Fleece, ₱ ℔	40 @ 60	35 @ 55
Domestic, pulled, ₱ ℔	22 @ 45	23 @ 45
California, unwashed	17 @ 30	17 @ 30
TALLOW, ₱ ℔	9¼@ 9¾	9¼@ 9¾
OIL-CAKE—₱ ton	41 50 @42 75	42 50 @45 00
PORK—Mess, ₱ barrel	30 45 @30 62½	28 00 @29 75
Prime, ₱ barrel	22 00 @23 50	22 00 @23 75
BEEF—Plain mess	12 00 @18 00	11 00 @18 00
LARD, in trcs. & barrels, ₱ ℔	14¾@ 16¾	14¼@ 16¾
BUTTER—Western, ₱ ℔	15 @ 30	15 @ 30
State, ₱ ℔	20 @ 31	22 @ 35
CHEESE	5 @ 17½	5 @ 14½
BEANS—₱ bushel	1 20 @ 2 50	1 20 @ 2 50
PEAS—Canada, in bond, ₱ bu	1 10 @ 1 15	1 12 @ 1 15
EGGS—Fresh, ₱ dozen	22 @ 24	25 @ 28
POULTRY—Fowls & Chickens	18 @ 20	20 @ 21
Chickens, Spring, ₱ pair		75 @ 1 25
Turkeys, ₱ ℔	18 @ 21	20 @ 21
Geese, ₱ pair	1 25 @ 2 50	1 50 @ 2 00
POTATOES, ₱ bbl	1 50 @ 2 50	3 50 @ 6 50
APPLES—₱ barrel	2 00 @ 6 00	3 00 @ 6 00
Pears, ₱ crate		1 75 @ 3 00
Peaches, ₱ crate		4 00 @ 8 00
Currants, ₱ ℔		7 @ 15
Cherries, ₱ ℔		12 @ 18
Gooseberries, ₱ bushel		3 50 @ 4 00
SWEET POTATOES, ₱ bbl	— @ —	— @ —
TURNIPS—₱ 100 bunches	— @ —	2 50 @ 5 00
CABBAGES—₱ 100	4 00 @ 8 00	5 00 @ 8 00
ONIONS—₱ crate	@	1 50 @ 2 50
CRANBERRIES—₱ bbl	— @ —	— @ —
BROOM-CORN—₱ ℔	10 @ 15	8 @ 13
Tomatoes, new, per crate	@	1 75 @ 2 50
Peas, green, per bbl	3 00 @ 3 50	2 00 @ 3 00
Cucumbers, ₱ 100		1 75 @ 2 25
Squashes, Long Island, ₱ bbl		2 00 @ 3 00
Blackberries, ₱ quart		4 @ 22
Raspberries, ₱ quart		6 @ 12
Whortleberries, ₱ bushel		3 00 @ 5 00

New York Live-Stock Markets.—

WEEK ENDING.	*Beeves.*	*Cows.*	*Calves.*	*Sheep.*	*Swine.*	*Tot'l.*
June 22d	6,405	72	3,372	22,720	20,301	52,771
do. 28th	5,360	64	3,382	24,886	17,318	51,520
July 5th	6,013	66	3,283	27,660	11,068	48,061
do. 13th	7,941	288	2,118	30,689	15,249	56,295
Total in 4 Weeks	25,720	470	12,555	106,005	63,877	208,647
do. *for prev. 5 Weeks*	33,132	391	19,567	98,924	100,140	251,157
	Beeves.	*Cows.*	*Calves.*	*Sheep.*	*Swine.*	
Average per Week	6,430	117	3,139	25,501	15,969	
do. do. *last Month*	6,626	78	3,913	19,785	20,028	
do. do. *prev's Month*	6,280	84	3,731	14,393	14,271	
Average per Week, 1869	6,275	92	1,772	28,836	15,348	
do. do. do. 1868	5,733	105	1,588	27,182	18,809	
do. do. do. 1867	5,544	61	1,320	22,154	20,605	
do. do. do. 1866	5,748	94	1,300	20,000	13,000	
do. do. do. 1865	5,235	118	1,500	16,091	11,073	
Total in 1869	326,350	4,837	91,083	1,499,160	798,190	
Total in 1868	298,128	5,466	82,571	1,413,479	978,061	
Total in 1867	293,832	3,369	69,911	1,174,154	1,102,643	
Total in 1866	298,880	4,885	62,420	1,040,000	672,000	
Total in 1865	270,271	6,161	71,991	836,733	573,190	
Total in 1864	267,609	7,603	75,621	782,462	660,271	

Beef Cattle.—Notwithstanding the increased supply of cattle in market, consequent in a great measure upon the greatly reduced rates of transportation, prices have not changed much since our last report. For the two weeks ending June 28th, prices were about ½ ct. per pound lower on all grades; but buyers pretty generally went West for their stock and paid the producer a higher price, so that the butcher here gained but little by the railroad war, as it is called. This fact has also had a tendency to gradnate the supply, and at no time has the market been too full or trade dull. We have had a great many poor, thin, Texas cattle, which sold very low. Good grades, however, remain about the same; the best of each drove going at 17c. per pound, or a trifle less if a "little green." Below we give the list of prices, average, and figures at which the largest were sold.

June 22d, ranged	12	@17	c.	Av. 15	c.	Large sales 14	@16c.
do. 28th, do.	10	@17	c.	do. 15¼	c.	do. 14	@16½
July 5th, do.	9	@17	c.	do. 15¼	c.	do. 14	@16½
do. 13th, do.	11	@17	c.	do. 15	c.	do. 14	@16

Milch Cows.—Hot weather and dry feed are bad for milch cows, and those which are not sold at once, soon fall off in milk and look poorly. The demand for cows at this season of the year is light, and but few really first-class ones are on sale. Prices range from $45 for medium half-milked, up to $85 and $90, and even $100, for the best on sale. Some common Canada cows have been sold as low as $38.....**Calves** are poor and plenty for the hot season. Trade is dull, and except for the very best, prices correspondingly low. Buttermilk and grass fed, 4c.@6c. per pound. Milk veals, 6½c.@8c., with very choice 9c.@10c. per pound.....**Sheep** and **Lambs.**—The arrivals have been quite large, and trade, though firm, has been at lower figures. We quote very poor to ordinary sheep at from 4c.@4½c.; medium to good, 5c.@6c.; and for extra, 6½c.@7c. per pound. Lambs vary a great deal in size and quality, and the range of price is great. Poor lambs sell as low as 7½c.@8c., and the best reach as high as 13c. per pound. Most of the sales are between 9c.@12c. per pound.....**Swine.**—There has been quite a falling off in supply to this department, and prices have also gone down a little. Packers have been greatly inconvenienced by the scarcity and high price of ice, and have in some cases stopped slaughtering. This has thrown the lean hogs on the market, and prices dropped a little. We quote live hogs at 9¼c., and dressed at 11c.@11¾c.

containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Postage 12 Cents a Year in Advance.—The postage on the *American Agriculturist* anywhere in the United States and Territories, *paid in advance*, is 3 cents a quarter, 12 cents a year. If not paid in advance, twice these rates may be charged.

How to Remit:—Checks on New York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county-seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us *without any loss.*

Registered Letters, under the new system, which went into effect Oct. 1, 1868, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. *Observe*, the *Registry fee*, as well as postage, *must be paid in stamps* at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. *Buy and affix the stamps both for postage and registry, put in the money, and seal the letter in the presence of the postmaster, and take his receipt for it.* Letters thus sent to us are at our risk.

Clubs can at any time be increased by remitting for each addition the price paid by the original members, if the subscriptions all date at the same starting point. The back numbers will, of course, be sent to added names.

Bound Copies of Volume XXVIII (1869) are now ready. Price, $2, at our office; or $2.50 each, if sent by mail. Any of the previous twelve volumes (16 to 28) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style at 75 cents per vol., (50 cents extra, if returned by mail.) Missing numbers supplied at 12 cents each.

The Season and the Crops.—The season is now so far advanced that a fair judgment may be passed upon the crop prospects. The hay crop of the northern seaboard States has been seriously damaged by the June drouth, which, in many important grazing sections, was of unusual severity; as it was also at the West in more limited districts. Hay will probably rule high in price, and should be supplemented by careful saving of oat straw and corn fodder, and the sowing of wheat or oats, turnips or rape for late pasturage. It might be well to try spurrey (see another item,) and it would surely be well to sow wheat and rye for early spring feeding. Sweet turnips sowed now will give a good return in roots. Wheat and rye are less plump than they would have been had they not been ripened up so fast. The crop

will not be a large one, both on account of extensive winter-killing of broadcast grain, and on account of the drouth. Spring wheat promises to make up in some degree for the deficiencies of the winter wheat crop, as the season has been remarkably propitious for it; and the abundant harvest rains, coming too late for winter grains, have favored spring wheat, oats, and barley, very greatly. Little complaint of midge or rust has come to us so far. The corn crop of the Eastern States was much put back by the drouth, and that of the West suffered also. Early planted corn was much of it in a condition to be rather benefited than otherwise by the dry, hot weather, and thus a wonderful disparity existed, which will tell at harvest time. *Potatoes.*—We fear the low price which potatoes brought this spring has induced the planting of a small breadth of land to them. They are looking finely at the time of writing (July 14th), late varieties promising especially well.

Agricultural and Horticultural Fairs.—We are obliged to go to press so early in the month that we are unable to prepare a satisfactory list of Fairs for our August number. The Fairs to be held in August, were mentioned last month on page 247. We shall endeavor to publish as complete a list as possible in September, and will be glad to receive premium lists and any information which will make it more accurate.

Great Field Trial of Harvesting Implements.—The Missouri State Board of Agriculture made, according to announcement, a trial of Field Harvesting Machines near St. Louis. The competition between Mowers, Reapers, etc., was between the following machines: Champion, Advance, Acme, Kirby, Clipper, Excelsior, Burdick, Climax, Ætna, Bucyrus, John P. Murray, Marsh Harvester, and Meadow King. There was, besides, Stacking and Pitching Apparatus. The premiums awarded are as follows: Best *Harvester*, "the Marsh;" best *Combined Reaper and Mower*, "New York Clipper;" best *Self-raking Reaper*, "the Burdick" (Kirby Improved); best *Reaper*, "Climax;" best *Mower*, "Acme" (Climax improved); best *Hay Fork*, "Nellis' improved Rogers' Harpoon; best *Stacker*, *etc.*, "Nellis."

New York State Fair of 1870, at Utica, Sept. 27, 28, 29, 30. Entries close August 31, but intending exhibitors of fruits and flowers need only make their applications for space in advance, and, if they prefer, may defer making detailed entries until the morning of Tuesday, Sept. 27. TRIAL OF IMPLEMENTS.—The testing and judging of implements and machines will begin on Monday, September 12, at Utica, and continue probably two weeks. No premiums will be awarded without actual trial for any implements in sections 17 and 18 of the Premium-List, and trial cannot be promised to any exhibitors making their entries later than August 15. Other machines besides those mentioned in the Premium-List, will be admitted to trial if they give promise of value and if time will admit. For copies of the Premium-List, and for blank forms for entries, address the Secretary, State Agricultural rooms, Albany, N. Y.

Crops in Illinois.—N. J. Shepherd, St. Clair Co., writes: "Since the wheat harvest is about over we can judge pretty well of the prospect for a good crop for this year. Wheat is something better this year, though it stood very thin on the ground, so much so that a large number of acres were too thin to pay for harvesting. The grain is somewhat better than it was last year. The prospect for oats, corn, and hay, is very good, and if the price is not too low, these will relieve farmers greatly from their indebtedness. Farmers were more careful this season in getting harvest hands, and the majority paid $2 per day for men. The prospect for fruit is very flattering; there seems to be an abundance of small fruits now, and more coming on."

Pomologists in California.—Our pomological friends in California are enjoying a visit from some of their distinguished, eastern brethren. We doubt not that the visitors on their part are highly enjoying themselves; and we know none better able to appreciate the horticultural wonders of California than such gentlemen as Wilder, Downing, Barry & Ellwanger, who, with others, compose the party. Perhaps this visit may lead to a meeting of the Am. Pomological Society upon the Pacific coast in 1873.

Mr. Dreer's Establishment. — We have long known Mr. Henry A. Dreer, of Philadelphia, as an enterprising and reliable seedsman; but we were not prepared to find him so largely engaged as a florist, as a recent visit to his establishment showed him to be. At West Philadelphia he has a garden and green-houses, and at Riverton, N. J., a large farm devoted to seed-raising, bulb-growing, and the propagation of small nursery stock. Here, also, is another extensive range of green-houses. Gladiolnses, Tuberoses, Verbenas, etc., are grown by the acre for seeds and bulbs. Onion Sets, which are a Philadelphia specialty, covered a large area, and numerous crops of vegetable seeds, small fruits, ornamental shrubs and vines, and evergreens had their appropriate quarters. We saw here many interesting plants, some of which we may notice at another time.

President Wilder Strawberry.—This new variety was not mentioned in our notes upon page 304, as at the time they were made up we had not seen any specimens. It has not fruited to any extent in the neighborhood of New York, but at the June Exhibition of the Mass. Hort. Society it was the principal feature. A sample of the fruit from J. M. Merrick, Jr., of Waltham, Mass., was sent to Messrs. Bliss & Son, which, though it endured the rough handling of the expressmen satisfactorily, had been too long from the vines to appear at its best in point of flavor.... We notice in the Country Gentleman a communication signed "J. E. Tilton & Co., Proprietors of the President Wilder Strawberry Plant." Is there but one plant, and who is the "proprietor" of those we received from Col. Wilder himself?

Old Seeds.—"H. L. H.," Portage Co., O., wishes we would "blow up in the humbug column," those who furnish country merchants with garden seeds, as those which are sold are too old to germinate. We think that the country merchants have as much to do with selling old stock as those who supply them. We advise our correspondent to send to some seedsman of reputation for his stock of seeds, and he will fare better.

Cabbages—American and Foreign Varieties.—Recently we visited a farm upon Long Island, to examine a crop of cabbages which had been raised for Mr. Dreer, of Philadelphia, for the purpose of testing the most popular European varieties by the side of our own. There were some 30 varieties grown in field culture, and in sufficient quantities to show what they would do as a crop. They presented a wide range of quality, from perfectly worthless to very good. There were only two or three that seemed to be worthy of further trial. The result of the experiment is, that we have little to gain by going abroad for our varieties of cabbage. Several of the European varieties have been so modified by culture in this country that seed of the same kind grown here is vastly preferable to the imported. Some of the Long Island farmers have local varieties, or strains, which they have obtained by selection, in which earliness and solidity are combined in great perfection.

Sundry Humbugs.—Multitudes of letters come to us, asking about many parties we have already exposed. Our previous articles under this head should be consulted. We can not continually go over the same ground again for the benefit of such writers. New subscribers, of course, can not refer to back numbers. It may generally be understood that when we do not refer to such inquiries, it is because the parties inquired about have already been shown up within a few months, or a year or two at most.....The City Swindlers who have made money enough, are, like many others, off to the "Watering-Places" and "Country Retreats," and some of them carry their "business" with them. The chap who has operated extensively as "Daily & Co.", "Wogan & Co.", "Waters & Co.", and under sundry other *aliases*, most of which we have shown up, prints a lot of circulars, all alike, and puts in a card, giving himself various names and addresses. He dispatched to the far West and South, a large lot of these circulars, giving in some a card "Samuel Fox, Bergen Point, N. J."; in others a card, "Peter Jackson," same P. O.; and in others, "Edward Palmer," same P. O. Fortunately, Mr. Gayler kept track of him; and his numerous letters, excepting a very few of the first, went to the Washington Dead-letter Office, to be returned to the unfortunate, dishonest dupes, who wanted to deal in counterfeit money. It is better treatment than *they* deserved.....One of the most plausible schemes is signed "J. Fuller, 37 LaFayette Place, N. Y.", under a letter head "W. H. Morris & Co., Clifton Building." He pretends to print from a genuine U. S. plate obtained surreptitiously from the U. S. Treasury Department. He will doubtless take in a good many victims.....T. F. Wood, Vernon, N. J., offers not only the "queer," but "exciting" books to injure the young.—Will Mr. Gayler please engage lodgings for this rascal along side of Jas. S. Colgate, at Sing Sing.....Thomas W. Pierce, 89 Nassau-st., *alias* Wm. B. Logan, 15 Dutch-st., *alias* Wm. J. Ferguson, 194 Broadway; Rufus Stockton, 204 Broadway, *alias* Adam Smith, 210 Broadway; Robert H. Holland, 242 Fulton-st., and 73 Nassau-st., *alias* John F. Hamilton, 212 Broadway, and 73 Nassau-st.; Henry E. Stewart, Earle's Hotel, and W. H. Wood, 206 Broadway, etc., are the assumed names of operators in Photographs, pretending to be money.....The Express swindle is revived again. For example, G. L. Seymour writes to a young man in Wabash, Indiana, that a package has been received for him at the office of the "American Dispatch Express Company, 184 Broadway," on which there are $2.35 charges due, and that if it is not paid for in 20 days the goods will be sold at auction—a swindle of course. In this case, the operator calling himself G. L. Seymour, has got hold of an old list of names, as the party to whom the statement was sent, has resided in Maryland, eight months past, and the important notice was forwarded to him there from Wabash.....Deafness. To N. B. R., and others. Don't send your money. If the "Dr." can't trust you, don't you trust to his returning the money. But no Doctor advertising certain cures is to be trusted either with your money, or life, or health, or ears, or eyes.....W. M. of Mich., and ——, Darestown, N. J. That Bowery Doctor is a vile humbug. Ditto the "Regenerator"......"Howard Association." We are receiving other letters in corroboration of what was said on this topic last month. To cure the "errors of youth" don't send money to the chaps running those swindling "Associations," so-called. Take strong, active exercise; eat nourishing, easily digestible food, but nothing after 4 or 5 P. M.; sleep on a hard bed, and give medicines to the dogs. This prescription is worth a million times all you will get from the "Howard Association" after they have called on you time and again for money, money, and more money, and sent you "powders," and other stuff in any quantity. .....Henry P. Jones & Co. (so-called), keep on referring to McKillop, Sprague & Co., etc., for their "Grand Presentation $275,000 Enterprise" humbug. See our April No., page 126, and May number, page 166.....Beware of advertisements of sewing machines, on the gift principle, from unknown new parties. One such party offers to send a machine C. O. D., *if* a few dollars be sent with the order. They, of course, pocket the money, and that is the end of it, so far as the sender is concerned.

Arbor Vitæs.—A lady wishes to know if pruning will prevent her Arbor Vitæs from turning brown in the fall. It is one of the faults of this tree that it becomes unsightly in winter. No pruning or other treatment will remedy it.

Four-leaved Clover.—J. R. Carter. The clover with four or more divisions of the leaf instead of the usual number of three is not a species, but a not very unusual development of common clover.

Wild Lilies.—A correspondent sends us a specimen of the Turk's-Cap Lily, and asks if it can be transplanted to the garden. This species (*Lilium superbum*) makes a fine plant in cultivation, and is highly valued in Europe. The most favorable time for taking up the bulbs is when the leaves have turned yellow.

Onion Seed.—A. N. Curtis. Our seed-growers thrash with a flail and winnow. Some wash the seed to clear it of the light particles, but our best growers do not approve of the practice.

Geranium Sporting.—"F. K. M.," Philadelphia. Some of the geraniums will sport in the way you mention, and by propagating the sporting branches the peculiarities are perpetuated.

Pear Blight.—C. H. Kent. The blight is probably a minute fungus, the presence of which is not suspected until the mischief is done. No preventive is known. The best way is to cut back the limbs to sound wood and burn the trimmings. White lead applied to the wounds of a tree has no special curative properties. It protects the part from the action of the weather, and is as easily applied as anything.

Characteristics of American Horticulture.—Under this title the editor of the Horticulturist writes to the English Gardener's Magazine. He says: "You do not find here a true American son of the soil touching anything high or low (much less horticultural) unless there is *some money* in it."—"There's an opinion as is an opinion."—Neighbor Williams should publish this article in his own journal, if he wishes to get up an excitement among American horticulturists.

Tan for Hot-beds.—"Weymouth." Tan is sometimes used for producing bottom heat. It takes much longer to heat up than stable manure, and the heat continues longer. It is sometimes mixed with stable manure. It is but little used in this country, and we cannot say how it would do for winter work.

Plants Named.—E. C. Breed, Waupacca Co., Wis. The Twin-flower, *Linnæa borealis*. A beautiful little vine and doubly interesting on account of bearing the name of the great Linnæus....W. S. Williamson, Coffee Co., Kansas. *Callirrhoë involucrata*. We know no

other name for it; frequently cultivated in gardens.... "D.," Goshen, Conn. *Equisetum arvense*, frequently called Ground Pine, and a weed in low wet lands...."B. F. T. & Bro.," Humboldt, Tenn. Virgin's Bower, *Clematis Virginiana*. The other plant sent called "Virgin's Bower in Tennessee is the American Wistaria, *Wistaria frutescens*....Lizzie M. Gilchrist, Hancock Co., Ind. No. 1, *Collinsia verna*. No. 2, Bellwort, *Uvularia perfoliata*. No. 3, Strawberry-bush, *Euonymus Americanus*..... "Sago," Md. Some cultivated Willow, which we cannot name from the leaves alone....S. F. Bradford, Berrien Co., Mich. The Pale Corydalis, *Corydalis glauca*. We have often seen it in your State. It is pretty in the garden...."Inquirer." Apparently *Ornithogalum pyramidale*, but we are not sure from the specimen sent...."L. W. G.," Baltimore, Md. Reed Canary-grass, *Phalaris arundinacea*, a very coarse grass of little value...."J. W. R.," Bath, Me. Wake-Robin, or Indian Turnip, *Arisæma triphyllum*. Will grow in the garden...."D. E. R.," Port Royal, Pa. Viper's Bugloss, *Echium vulgare*, and a persistent weed it is. By all means prevent its spreading if it requires cutting over every day. Keep the leaves cut away as fast as they appear, and it will get exhausted in time...."A. L.," Exeter, N. H. No. 1, Shin-leaf, *Pyrola elliptica*. No. 2, *Polygala polygama*. No. 3, Three-flowered Bed-straw, *Galium triflorum*. No. 4, Four-leaved Loosestrife, *Lysimachia quadrifolia*.

Forcing Asparagus. — "Weymouth." This is done to a considerable extent in France and England, but very little in this country. In England the plants are forced in the beds where they stand; being planted with special reference to the purpose, with alleys for the reception of hot manure, frames and sashes being used to cover the bed. In France, three-year-old plants are lifted and placed close together on a hot-bed which is covered with a few inches of soil, and the roots are covered. A temperature of 65° to 70° is found most suitable.

Preserving Grapes. — W. H. Brown, Cass Co., Ind., asks about preserving grapes, stating that he has tried all the plans recommended, and failed. He does not say what kind of grapes he has tried. The Concord is a very poor keeper, and so are the Martha and Delaware; while Catawba, Isabella, Diana, Iona, Eumelan, and others, keep easily until Christmas, and often much later. Packing in small boxes of 5 or 10 lbs. each, after they have been picked a week or two, and then keeping in a uniformly cool place where they will not freeze, is the plan usually followed.

Meehan's Nursery.—Our friend Meehan, of the Gardener's Monthly, says so little about his own affairs in his journal that probably but few of his readers are aware that he has an extensive nursery at Germantown, Pa. In a hurried visit we did not have much time to look at his general stock, as we were too much taken up with the many rare old and new things which he has stowed away in odd corners. It is very pleasant to see a dealer in plants at the same time an enthusiastic lover of them; and we regret that we had not sufficient daylight to allow of the inspection of all the interesting specimens that Mr. M. has collected.

Budding.—" J. C.," Denton, Tex. The proper time to bud is when the bark of the stock lifts readily from the wood, and well-formed buds of the kind to be propagated can be obtained. The time will vary with the locality and with the season. Your partial failure may be due to one of several causes. The ties may not have been cut soon enough, or an unusual growth of the stock may have taken place and "drowned" the bud, as it is termed. Yours is a peculiar climate, and you will have to learn by experiment how to adapt your operations to it.

Fine Hollyhocks.—Our friend, William Chorlton, of Staten Island, sent us a box of hollyhocks which, for purity and delicacy of color and excellence of form, it would be difficult to excel. To call these "double" seems a misnomer, when the center of the flower is as full as it could be. Mr. C.'s seed was from Chaytor, a celebrated English grower.

Mr. Herstine's Raspberries. — Mr. D. W. Herstine, of Philadelphia, has been experimenting in the production of seedling raspberries. He sowed the seeds produced by the Allen, grown in proximity to the Philadelphia, and obtained a number of seedlings, the progress of which has been watched by the horticulturists of Philadelphia, with much interest. On the 6th of July, the Fruit Committee of the Penn'a Horticultural Society met upon Mr. Herstine's grounds for the purpose of deciding upon the qualities of these new seedlings, and giving names to such as they might consider worthy of cultivation. The meeting was the occasion of a remarkably pleasant horticultural gathering. The principal horticulturists of Philadelphia, and the most noted fruit growers of Burlington Co., N. J., were present, as were several from other places. The *American Agriculturist*, *Gardener's Monthly*, *N. Y. Tribune*, *Hearth and Home*, and *Germantown Telegraph*, were editorially represented. The Committee decided that four of Mr. Herstine's seedlings possessed qualities which entitled them to names, and these were called Herstine, Elizabeth, Ruby and Saunders. They are all large, red berries, of excellent flavor, very productive and hardy. They differ somewhat in the shade of red, in flavor and in foliage. Detailed descriptions of them will appear in the report of the committee. It was the unanimous opinion of the gentlemen present that Mr. H. had achieved great success in producing raspberries as hardy and productive as the Philadelphia, and which can rank "very good," as to quality. We shall be glad to hear that these new fruits prove as satisfactory elsewhere as they have upon the grounds where they originated.

What shall he Plant?—"P. W. J.," Fowler, Ill., has a piece of land on which he wishes to plant an orchard, and asks if he shall select Apples, Pears, or Quinces. As he is near a city, we should plant all three. Probably early varieties of apples and pears would pay best, and in the selection of these we should be governed by local preferences. A fruit that is unknown, though it may be of superior quality, cannot compete with a variety which is well known and a favorite. The advice of a dealer at the city where the fruit is to be sold would be better than what any one at a distance can give. Rea's seedling is the best quince, but the trees are rather scarce. The Apple or Orange variety is most cultivated for a near market.

Slugs and Striped Bugs.—"D.," Goshen, Conn., says: "I used to be troubled with the garden slug, or shell-less snail. They were especially destructive to tomatoes and cabbages. Supported the tomatoes on frames; then encircled the plants with bran, wheat or rye, at a distance of three or four inches from the stalk. After dark found the bran full of slugs, which could then be picked up and destroyed; or sprinkled salt on them, when they disappeared, seeming to deliquesce, or liquify. I think a circle of salt, while it lasted, would protect the plants. I never lose cucumber or melon vines with the striped bug. Use simply and only a square box, without any covering, say 14 inches square, and 8 to 10 inches deep, set about the hills at time of planting the seed, earthing up around the bottom. The bug flies indeed, but I have rarely found one inside of these boxes, until the vines showed over the top."

Patented Articles.—"Burdock" asks: "Can a man make an article on which there is a patent right, without paying a royalty or exposing himself to prosecution, if he makes it exclusively for his own use and not to sell?"—No.

New York Papers.—There are several papers published in New York which are exclusively or in part devoted to agriculture and rural matters. To read some of the agricultural papers published elsewhere, one would suppose that it were a crime or a blunder for a publisher to be located in New York. "Abuse the opposite counsel," is the motto with some lawyers, and "abuse the New York papers," seems to be the standing rule with some editors; so we get it in the lump and in detail. When these attacks are especially directed to us we mete out the worst possible punishment to the writers thereof—we do not notice them. One person recently imagined some private conversation with one of our editors, and published it in the vain hope of a notice. These individual and general attacks by writers at a distance, having had no effect, new tactics have been adopted in the form of correspondence from near N. Y. A Pennsylvania paper publishes one of these letters in which New York publishers and editors are put down as incompetent, because they will not publish this writer's articles. This is a censure which is, indeed, high praise; and we should not have noticed the matter but for the reason that some Southern papers have quoted this article as the testimony against New York papers. Editors from abroad can learn but little about New York newspaper people during their occasional visits here, or they would know that there is no place where merit is more promptly recognized, or where pretence is more quickly set aside than here. In New York a man soon finds his true level, especially in the newspaper line; he is judged by his work, and no self assertion will help him if that be defective. When a man has been weighed and found wanting, his best course is to go into some other line where he might be useful; but all do not think so, hence we have a class, known to the press as Bohemians, who pick up a precarious living by doing literary scrapwork. A few of these unfortunately hang around the agricultural press, waiting for some inexperienced publisher to pick them up, or try by underbidding, or by means of anonymous letters to supplant some one already occupying a position. These Agricultural Bohemians are generally men who, not succeeding at farming, come to the city with a small stock of facts and start as editors. They call themselves "practical men," and get upon agricultural papers; in a few months their stock of ill-assorted knowledge being exhausted, they are of no further use. Their next step is to attach themselves as agricultural editors to daily papers where they run for a short time and are dropped; they then get upon the staff of the "religious" papers, but even get found out there; at last they become regular Bohemians, wandering from paper to paper in the hope of selling their often rejected articles. They always have one resource,—it is not to go to work, for this style of "practical men" avoids that, but they can write letters to the country papers and abuse those who do not see fit to employ them. The wonder is not that such letters should be written, but that any paper should consider them worthy of publication. We doubt if a paper could be found in New York so wanting in professional courtesy as to open its columns to a wholesale libel upon the press of another city. The New York publishers are successful only as they make such papers as the people want, and one way they succeed in doing this is by keeping clear of these pretenders and Bohemians. There is a great deal of nonsense talked about "practical men." It is a taking phrase, and there are not wanting those who use it as an advertisement, and are continually vaunting their superiority in this matter. We have the greatest respect for truly practical men, but very little for those who, fearing that the world will not otherwise know it, are constantly telling how practical they are, leaving it to be inferred that they have a monopoly of that quality. As far as the *Agriculturist* is concerned, every member of its staff lives upon a farm, and works with his own hands; an example we would commend to those who, failing as editors, are now the Bohemians of the Agricultural press.

A Large Box-tree.—Growing against the old Belmont Mansion, now included in the magnificent Fairmount Park, at Philadelphia, is a remarkable specimen of Tree Box. The trunk is divided from the base into four parts, one of which is over a foot in diameter. The tree is some 30 feet in hight, but being placed close to the building it is not well shaped.

New York State Poultry Society. —The stated Semi-Annual Meeting of this useful Society took place at its rooms in this City, on Tuesday, July 12th. The action taken was in brief, as follows: 1st. An exhibition of useful and ornamental poultry, pet animals and poultry appliances. Living specimens of artificial fish-breeding and apparatus used in Pisciculture, will be made in New York, commencing Dec. 14, and closing Dec. 22d, entries close Dec. 11th. 2d. The fees for membership and the annual dues were reduced from $5 and $3, to $3 and $2. and the fee for life membership was reduced from $50 to $25. 3d. The action of the executive committee in establishing the Poultry Bulletin, which is sent free to members who have paid their annual dues, was endorsed by the Society. 4th. The whole subject of the adoption of a standard of points of excellence in poultry, was referred to the executive committee, with powers to adopt and promulgate. 5th. The borrowing of specimens to exhibit, and the conditional purchase of the same, with the same object, and with the intention to return them to the former owner, was declared a gross misdemeanor, exposing the exhibitor to the forfeit of all his premiums, and a member to suspension or expulsion.

Importation of Animals, etc.—The new Tariff admits duty free all kinds of animals from beyond the seas imported for breeding purposes. Also, animals brought in for exhibition and to be returned; also, animals with harness and tackle, owned by immigrants; also, eggs, and silk worms' eggs.

Artists.—All artists are not painters or sculptors, but we have artists among farmers as well. Well-arranged buildings, rooms nicely adapted to the uses for which they are designed and kept in perfect order, a stable well filled with good stock tastefully arranged, or an original landscape worthy of an artist's pencil, are scenes which some of our farmers are constantly bringing before our admiring eyes. Even a ditch may be made attractive and beautiful as was remarked of one we were examining a few days ago, 100 yards long, 4 feet deep, as straight as an arrow, 12 inches wide at the top and 4 inches at the bottom, graded to a hair, and the bottom as solid as hard clay; it drew forth expressions of admiration from every one who looked at it. Joseph Amberson was the artist, and he, with his gang, challenges the Continent to compete with him in ditching as to style, rapidity, and price of work. He may be addressed to the care of Col. Geo. E. Waring, Jr., Newport, R. I.

Vinegar Making.—"B. H." asks if it will accelerate the conversion of cider into vinegar to add yeast. As vinegar is usually made, probably not. What is needed is free access of air. The cider naturally contains enough ferment, and if it be exposed freely to air, the change takes place. Some secret and patented processes are founded upon this fact.

The "Fly" on Turnips and Cabbage Plants.—"D.," Goshen, Conn., writes that a mixture of equal parts of wood-ashes, plaster, and rye flour, sifted upon the plants while wet with dew, will successfully rid them of the "fly."—The flour is used to make the other ingredients adhere.

Black Ants.—N. S. Buckley says: "All articles set upon a cold stove or other cold iron are safe from the attacks of black ants.

Mice or Moles?—"Fowler," Orange, N. J., asks how to destroy mice which injure his bulbs. Are they mice?—They are more probably moles. In either case, some kind of a trap is, thus far, the best remedy.

The Colorado Potato Beetle.—Several inquire about '*the* potato bug." There are several beetles which live upon potato vines, the most destructive of which is known as the 12-lined Spearman, or Colorado Beetle. As we have already twice figured this insect, we will say that it is in shape somewhat like a large Lady-bug, yellow, and with twelve black longitudinal lines. The remedy that has been found most effectual is Paris Green. This is mixed with 8 or 10 times its bulk of flour and dusted upon the vines while the dew is on. A very slight quantity is said to be sufficient. A broad-mouthed bottle with a bit of gauze tied over it may be used for applying it. We give this remedy with the positive announcement that Paris Green is a dangerous compound of arsenic and a *deadly poison*. The use of Paris Green is commended in the journals of those States in which the insect abounds, and by our correspondents. If used, every care should be taken to avoid accidents, and the operator should be upon the windward side of the vines and avoid breathing the dust.

Oats Cut and Cured as Hay.—"H. L. B." Oats cut and cured as hay can hardly be said to have a market value; they are, however, constantly used in this way, and are found to be profitable. We should say, ton for ton, they would be worth as much as good timothy hay. The oats should be cut while the most forward heads are just coming into the dough state, and while most of the crop is still in the milk. If tall, they should be cradled and bound, as it saves labor in cutting. Oats should be cut small with a hay-cutter, and wet up with a little bran or meal when fed out.

Spurrey.—We are informed by a friend who is familiar with the use of Spurrey in Germany, that it is highly valued, in fact, regarded as indispensable in some sections, as fall feed for milch cows. It is sown after the rye harvest in July, or early in August, and affords rich succulent pasturage in October, upon which it is customary to tether the cows. See article on page 246 (July.)

"Superphosphate" Recipe.—"W. R. Y.," Myersville, Md., asks if the following recipe for making superphosphate is good. It is no superphosphate, but a rich nitrogenous and phosphatic manure, and we presume is one of those secret recipes which are advertised so often. Here it is:...."**For Corn or Wheat.**—Take 600 lbs. of good, rich earth, spread on a floor, and then add 500 lbs. of Peruvian Guano, 100 lbs. Sulphate of Ammonia, 500 lbs. Flour of Raw-Bone, 100 lbs. Pulverized Saltpetre, and 200 lbs. ground Plaster. 200 lbs. of the mixture for one acre."—This mixture would not cost less than $70 for the 2,000 lbs. directed, of which 600 is earth, and it certainly is not worth more than half as much as Peruvian Guano, which, sifted, and mixed with earth and plaster, we would prefer at $100 a ton.

Ashes vs. Guano.—"W. H.," of Snow Camp, N. C., proposes this conundrum: "What are wood-ashes worth per bushel, if Peruvian Guano is worth $100 per ton?" Really this problem is about equivalent to this: If broadcloth is $7 a yard, what will a pair of shoes cost? Guano and Ashes are each used as manure—Broadcloth and Shoes are both articles of clothing. Almost anybody who raises grass, potatoes, corn, or cotton, can afford to pay 15 to 30 cents per bushel for good, quick wood-ashes, and often one might pay more with profit.—They may usually be bought for 10 to 15 cents per bushel. The use of Guano is to supply nitrogen and the phosphates. Ashes supply potash chiefly.

Self-milking Cows.—A cow sometimes gets the habit of milking herself, and as she appears to enjoy both the operation and the milk, it is hard to break her. We published some years ago a highly recommended cure, which was to slit the cow's tongue about 2 or 3 inches. Some readers tried this, and, failing, tried two square yokes placed on the neck and braced apart with iron bolts so that the cow could not get her head near her side. This was of course effectual. Now we have a letter from A. Allan, of St. Louis, Mo., saying that the yoke arrangement did not work, for the cow would break it, and that the tongue-slitting worked like a charm.

Cows that Hold up their Milk.—"N. M. F." It is very exasperating to sit and handle a cow's teats and vainly try to coax her to let down her milk, but we know no cure. Sit quietly and manipulate gently—after a while the muscles which hold the milk back will relax from sheer exhaustion, and you will get it. The plan we have often thought of putting in practice but have not, is to arrange a lid which shall close the manger. Then prepare cut hay with meal upon it, or roots or other favorite feed, which the cow must be deliberate about eating; then when one sits down to milk let him draw back the lid by a cord and give Cushy a bite. If she withhold her milk close the crib and open it only when the milk comes down. We think she would appreciate the *cause* and *effect*, and so be cured.

Churns.—W. G. Kukman, Gibson, Ill. You can get Thermometer Churns of almost every large dealer in agricultural implements and machinery the country through—at least such has been the case. Other and better churns have been introduced of late, and it may be the thermometer churns are not so easily found. We prefer testing the temperature before putting the cream into the churn and while it is in the churn, by a common brewer's thermometer held in the hand.

Minks.—We have numerous inquiries where live Minks can be purchased for breeding purposes. Those who have them for sale should advertise.

Trouble with Cabbages.—"G. A.," Biddeford, Me., writes us a pathetic account of his troubles in raising cabbage; the larva, or maggot, at the root destroyed his crop in spite of all the preventives he could think of. Some time ago Mr. P. T. Quinn offered a reward for the best remedy, and he is this season trying a large number of those proposed, and promises to publish his results. We doubt if the manure had anything to do with G. A's trouble.

August Butter.—"A. W. K.," Monmouth Co., N. J. If the cows are well fed, or have good pasturage, and their milk is kept cool, especially if cooled as soon as milked, and the cream is churned two or three times a week, and ice or spring water is at hand to control the temperature of the cream, of the churn, and of the butter when it comes, there is no difficulty about packing butter all summer. With half-fed cows, milk kept in a warm cellar, and warm, sour cream a week old, you will have soft and miserable, lardy butter, if any, which is not fit to eat to begin with, and will be rancid in three weeks.

Industrial Exhibition.—A grand "Exposition" of Manufactures, Products, and Arts, will be opened at Cincinnati on Sept. 21st, and continue until Oct. 15th. Artizans, Manufacturers, and Inventors, are invited to exhibit, and can obtain a prospectus, giving rules, etc., by addressing "Cincinnati Industrial Exposition, Cincinnati, O."

Constitutions of Agricultural and Horticultural Societies and Clubs.—When men are really in earnest it requires very little machinery in the way of constitutions and by-laws to keep Associations together. Many societies spend so much force upon their constitution, that they have little left for their proper work. As we are frequently applied to for a form of constitution for clubs and societies, we give the following, which, with the necessary verbal changes, will answer for almost any society:

ART. 1. This Organization shall be known as the "Horticultural Society of Jo. Davies' County."

ART. 2. Its object shall be the advancement of Horticulture.

ART. 3. Its members shall consist of persons who have paid an annual fee of one dollar; and of Honorary Members of distinction in Horticulture and Agriculture.

ART. 4. Its officers shall consist of a President, five Vice Presidents, a Corresponding Secretary, a Recording Secretary, a Treasurer, and an Executive Board, which shall consist of a President and four other members; all of which shall be elected at the first regular meeting in the year, and shall hold their office one year, or until their successors in office are chosen.

ART. 5. The officers of this Society, and the Chairmen of the Standing Committees, shall be chosen by ballot, at the regular meeting in January, of each year, and a majority of all the votes cast shall be necessary to a choice.

ART. 6. There shall be the following Standing Committees: 1—On Orchards....2—On Vineyards....3—On Orchard Fruits....4—On Flowers....5—On Culinary Vegetables....6—On Entomology....7—On Botany and Vegetable Physiology....8—On Ornithology....9—On Small Fruits....10—On Wines....11—On Useful and Ornamental Planting.

ART. 7. The Society shall hold Monthly and other Meetings and Exhibitions as it may direct.

ART. 8. This Constitution may be amended at any regular meeting by two-thirds of the whole number of votes cast, one month's notice having previously been given.

Tobacco in Litchfield Co., Conn.—"A Constant Reader" is 18 years old, can hire a farm of 50 acres for $100, and inquires if without knowing anything about it he can make it pay by raising tobacco. We advise him to try some other crop first. Get a lease of the farm for 10 years with the right to purchase at a fair figure, if you wish. Then raise cattle and sheep and pigs, take horses to board, or in some way, keep all the stock you can keep well, and make all the manure possible. Then you can manure your corn land well, and top-dress your permanent meadows and get the farm in order, so that you and your man or men can keep ahead of the work easily; then lay out for half an acre of tobacco on the richest and warmest land you have, give it 50 to 100 big loads of manure, and take good care of the crop. Orange Judd & Co. have published a comprehensive little treatise on Tobacco for 25 cts., which it would pay you to possess. It contains the experience of several growers.

Labor from Castle Garden.—We cannot undertake to engage labor for our correspondents. We have ourselves frequently engaged men here and have obtained the poorest as well as the best help we ever had. One should come in person and pick out the men himself. If he is a good judge of character, he will be able to make a better selection than another can do for him. The officials, as far as our experience goes, are uniformly courteous and painstaking, but when they have brought the laborer and employer together, their duties cease. It is a well-managed labor market in which, as in all other markets, the purchaser must be a judge of the article.

Destroying Persimmons.—"J. A. M. R.," who lives in Georgia, is much troubled by persimmon "scrubs" in his fields. He wishes to know if any one can tell him a better way to destroy them than by the use of the grub-hoe and root-drag. Who is learned on the persimmon question?

Fleas upon Dogs.—"Cosmopolite." We have found an occasional washing with carbolic soap to keep the animals quite free of fleas.

Cranberries on Upland.—R. H. Rose and several others ask if cranberries will succeed on high, warm, and rich, sandy loam. We have no proof that cranberries have ever paid when grown on upland. The vines will sometimes be a long while in dying, and will produce some fruit; but we would not advise any one to undertake cranberry culture upon upland with a view to profitable returns.

Purification of Cisterns.—F. H. Robbins, of Allamakee Co., Iowa., writes: "Please inform me how to cleanse a cistern and keep it in good condition, and the water free from smell and taste?"—If it is foul, clean it out. If not, heat half a bushel of charcoal, and when in a glow, pound it into pieces as big as hickory nuts, and shovel them with the coarsest of the dust into a wet gunny bag or other coarse sack; put in a stone big enough to sink it, and, tying a cord to it, draw it up and down through the cistern, finally leaving it suspended near the top of the water one day and near the bottom the next. The results will be observed very soon, and will be permanent for several weeks, when the operation may have to be renewed.

Potatoes from Seed.—"F. H. M.," Scarborough, Me. When the potato balls are ripe, hang them in a dry place, leaving the seed untouched until time to sow. In the spring sow the seeds in a hot-bed or in a box in a warm window, just as you would those of tomatoes, and transplant to the open ground when danger of frost is over.

Fallen Apples.—"D. P." says: "Apples are dropping quite freely. Would it be of any use to spread ashes or lime under the trees to kill the worms that come out of the fruit?" This would be a very uncertain way of killing the larvæ in the apples. It is much better to gather the fallen fruit and feed it to the pigs.

Fig. 1.—FRONT ELEVATION.

No. 9—A House costing $2,200 to $3,000.

This house we designate as No. 9 of the series mainly designed by MR. JUDD, and already tested or being tested by him. It will come within the range of a great number of families. The variation in cost will depend partly upon location and price of labor and materials, and more upon the style of work, cornices, moldings, plumbing, whether basement be finished or not, etc., etc. The variation may indeed go further, say from $1,800 to $3,500, without materially changing the general plan or size. A careful estimate, at the prices given in our July number, page 248, makes this house, in fair style and finish with good moldings, and the plumbing described below, cost about $2,800, without the land. In none of the plans thus far given, has special provision been made for a sleeping room on the first floor, as is customary in most farm dwellings. The stratum of air near the ground is always unhealthful, especially at night. Fogs, dampness, and malaria abound near the soil. We see heavy fogs along the ground when the air is clear at the hight of 10 to 15 feet. The same reasons that lead invalids and health seekers to go to the mountains or elevated localities, should always take lodgers to a second or third story at night. An invalid, too feeble to be daily moved, and requiring constant attention, may be necessarily placed upon the first floor—though by no means the best place for a feeble person—and a first floor bed-room may be indispensable in some cases, though it would usually be preferable to give up the parlor or sitting-room to such a person, temporarily.—All the outer walls are filled in with brick between the studding. The siding is the 1-inch thick "Novelty," described in fig. 6 of our March number.

Fig. 1—Elevation.—The engraving gives the general style and appearance, as nearly as the artist can do so from the builder's minute drawings, which are plain lines (not in perspective). The basement is mainly above ground, for reasons here and previously given. Three or four extra steps elevate the occupants at all times above the damp soil. For flat prairies, or other localities exposed to very violent winds, the house is proportionately too high. In such cases the basement may be lowered, and the attic be omitted, though the latter is always desirable, and adds but little to the cost, while it furnishes much store room and two or more sleeping rooms if needed. The basement, floors, ceilings, roofing, doors, windows, etc., cost no more for a house 20 to 25 feet high, than for one only 15 to 20 feet high. The cornice, it will be seen, extends well out—a great help to the appearance of most houses. The appearance can be materially improved by more brackets, and by dentals on the cornice; by heavier moldings, window caps, etc. The roof is covered with tin, which is nearly as cheap as shingles now, (8½ to 9½c. per foot,) and cheaper in some places. (For some styles of brackets, etc., etc., see our June number, page 208.)

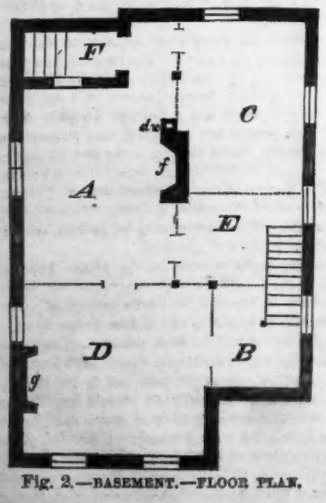


Fig. 2.—BASEMENT.—FLOOR PLAN.

Fig. 2—Basement.—Hight in clear 7½ feet. Walls of brick, 8 inches, with an air-space all through the middle, except where tie-bricks are thrown across. The whole Basement may be left in one room, as a cellar, with three or four piers of brick or locust posts firmly set on sunken, flat stones, to support the girders and partition walls above. The dotted lines show a good arrangement of basement rooms that may be made at first, or which can be put in readily afterwards if the means permit, or if the enlargement of the family require more room. The stairs and windows and fireplaces (*f* and *g*) should be adapted to this possible or probable use of the basement. In this case *D* would be the Dining-room, *A* the Kitchen, *C* the Cellar, *E* a large Pantry, *B* a Hall, *F* the rear entrance. Or, if desired, simply the room *A* may be finished off as a laundry or wash-room, or as a kitchen with a dumb-waiter, to be carried up, say at *dw*, or to whichever one of the rooms above is to be used as a dining-room.

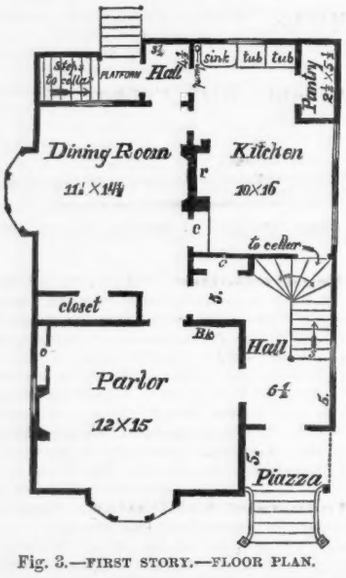


Fig. 3.—FIRST STORY.—FLOOR PLAN.

Fig. 3—First Story.—Hight in clear, 9 feet. A careful examination of the engraving will show the general arrangement, the economy of space, the "saving of steps" in the cooking, and other items of work, the provision for closets and pantries, *c*, *c*, *c*, *c*, etc. The Bay-windows add greatly to the apparent as well as real size of the rooms, and are ornamental to the exterior. The main hall and kitchen would be improved by adding 6 to 12 inches to the width of the house, where great economy is not studied, but they are of fair and convenient size, as indicated.——It will be noted that the doors, sink, pump, stationary wash-trays, and large pantry are placed near together to save steps. A cooking range, *r*, is intended, but a place for the copper boiler was overlooked. It was intended to put it by the side of the chimney where the door into the dining-room is now placed, and have that door the other side of the chimney where the closet is located; but that made the distance too great from the dining-room table to the kitchen sink. The chimney can well be placed a foot or so nearer the front of the house, and leave room between that and the door for the copper boiler. The exact location of every thing should be considered and decided upon before starting the foundations.——The rear, outside platform may be covered, or not, as desired. The stairs to the basement may be entered from the kitchen, or from the front hall when the basement is finished for a dining-room. There is sufficient head-room *under* the stairs to the second story.——*Bk*, in the Parlors, indicates a bell-pull to the kitchen. By passing the wire down and along the basement ceiling, a bell may be also attached in the basement kitchen (*A*, fig. 2). The stationery wash-tubs and sink are supplied with cold-water cocks from the pump, and hot-water cocks from the boiler. The force-pump

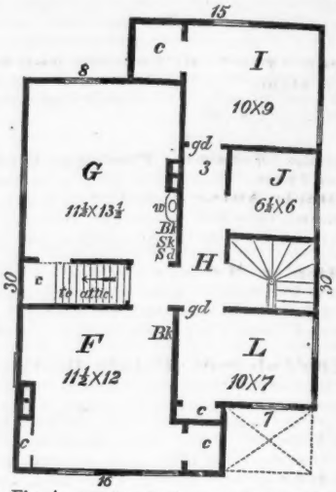


Fig. 4.—SECOND STORY.—FLOOR PLAN.

draws water from the cistern or well, and when needed forces it into the tank placed in the Attic or elsewhere.

Fig. 4—Second Story.—Hight in clear, 8¼ feet. The Hall, *H*, is lighted either by sash in the upper half of the doors, *gd*, *gd*, or by head-lights over these doors, which, if swung on hinges or pins, also serve as ventilators. (Ventilators, by the way, are to be placed in all rooms in both stories, with flues in the walls to carry the air to the attic.) Where needed, the flues may be carried through beams or girders, by piercing these with sundry auger holes for the passage of air, boring so as not to weaken the timbers too much. With the "Novelty Siding," firmly nailed on, a house is very strong, even though the timbers be very light, or weakened by cutting or boring. ——It will be seen that of the four larger chambers each has one or more closets. The room *J* will admit a 3-4 bed, or, it may be used for a bath-room or store-room. *F* and *G* may have mantels and fireplaces, or simply holes into chimney-flues, for stoves.——In *G*, the wash-sink, *w*, may be supplied with hot and cold water.——The stairs to the Attic are necessarily quite steep to afford head-room under the roof. The water-tank to catch water from the roof or receive it from the pump, for supplying the boiler, etc., is to be placed in the Attic, or if that be not raised high enough, it may be placed *over* the stairs, occupying the upper part of the second story. It may be of any desired length and width, and any where from 20 inches to four feet in depth. The larger it is, the less pumping up of water will there be. Water comes in from the roof, and when the tank is full, the surplus runs over through a pipe to the cistern. Wherever a Tank is placed, stronger or double studding should always be carried up from the basement, to support it firmly and safely.—— Bell-pulls, *Bk*, to Kitchen, are located in *F* and *G*, and in *G* a speaking tube, *Sk*, to the kitchen, and, *Sd*, to the front door, as described previously, for other houses.—— Blind windows are necessary back of the chimney, at the left of the Parlor, and of the Chamber *F*... In order to fully appreciate this plan, one will need to consider the many items taken into account, such as the least possible building of outer walls for the same space, the saving of steps in the arrangement of the working-rooms and apparatus, the securing of an abundant supply of closets or pantries, the provision for finishing off the basement in whole, or in part, whenever it may be desired, without much disturbance to the rest of the house and at small cost.

Dangerous Oils in Delaware.—The Council of the City of Wilmington, Del., appointed a committee of competent and disinterested citizens to examine the oils offered for sale. They presented an interesting account of their experiments, and summed up with the conclusions which we append, believing that the subject cannot be too frequently brought to public attention. Did a disease maim and destroy so many victims in a year as does unsafe oil, nearly every family would have a preventive or remedy at hand, at any cost. The preventive in the case of coal oils is a very cheap and simple one—let them alone. The following are the conclusions of the Wilmington Committee: "1. That Ocean Oil, Sunlight Oil, and Combination Fluids ignite at very low temperatures....2. Their vapors, when mixed with common air, are explosive....3. They spread con-

flagration with great rapidity, faster than gunpowder, their vapor reaching out and taking fire from a flame at a considerable distance....4. Their flames are more difficult to extinguish than the flame of Coal Oil....5. That these properties make them dangerous for common use for illuminating purposes.....That good Coal Oil, standing fire test of 110 deg., does not ignite so readily, does not form explosive vapors at so low a temperature, does not spread conflagration so rapidly, when ignited is more easily extinguished; and for all these reasons is much more safe for common use."

Swamp Meadow Parings—How to treat Them.—The turf, sods and bogs cut from swamp meadows, reclaimed for cranberry plantations or other purposes, when burnt or rotted, are useful as manure. "A. B. C.," writes: "I have a piece of upland joining a piece of low ground. It is often overflowed in the spring, and may be flowed at will. I have thought of preparing the wet part for a cranberry patch by taking off the grassy turf 3 or 4 inches deep, and covering with white sand. This turf I think would make an excellent dressing for my high ground, if well rotted. Shall I pile the turf, giving each layer a coating of unleached ashes, and pitching it over at a proper time? or shall I proceed in like manner, only using quick-lime, pounded reasonably fine, letting the lime slake in the heap by the water contained in the turf? It will be very difficult for me to obtain the necessary ashes, and it seems to me the lime will cure the raw muck in a shorter time. Which plan will be best? How long will it take? What quantity of lime or ashes should I use per cord of turf? and would salt be useful?"——*Ans.* A great part of the parings will probably be needed for the turf fences and dams, to retain the water. All kinds of mossy or, properly, grassy sods and parings decay easily, and may be treated as "A. B. C." proposes; but those kinds of grass (sedge), which grow in tussocks, form "bogs" or "nigger heads," which will be years in decaying, and are so tough it is of no use to spend time in cutting them in pieces. Those with roots, branches, etc., should be piled in heaps and burned when dry. The rest may be hauled off or laid up in heaps giving each layer a liberal dusting of lime, about 1 or 2 bushels to the load, say 4 or 5 to the cord (100 bushels). Salt will be of value at a distance from the sea coast; and the length of time will depend a good deal upon the amount of lime or ashes used. It is almost impossible nowadays to get ashes. If worked over, in about 6 weeks the heap may be fine enough for use, but it would probably be best to wait until spring.

Is Red Clover Poison?—W. G. Kuykendall, Putnam Co., Tenn., has known a good number of cattle lost from grazing on red clover. "They seem to have colic and usually die very suddenly. What is the *cause*, *preventive*, and *cure*?"——*Ans.* The cause is the fermentation of the clover in the rumen, or first stomach, forming gases, which close the entrance, cause the stomach to be fearfully inflated, and the whole body to be so swollen that the action of the lungs ceases and the poor beast dies of suffocation. This is called the *Hoove*, and the animals are said to be "*hoven*." The cure is to introduce the probang, which is a flexible tube made for the purpose, and which is stiff enough to be forced through the valve-like entrance to the rumen, yet flexible and elastic enough to accommodate itself to the bends in the gullet. Through this the gas may be let off, and water pumped in with a stomach-pump, to dilute the sour contents of the rumen and wash it out. A probang and stomach-pump ought to be the property of every large farmer. When no probang can be had, try tying a straw rope in the animal's mouth making it fast over the head back of the horns. The efforts of the beast to get rid of the rope will often cause an eructation of wind. Immediate relief of animals may sometimes be obtained by puncturing the abdomen near the loin with a knife or trochar, which is a knife and tube combined, so that there is little danger of the contents of the stomach being forced into the cavity of the abdomen, which often causes fatal effects. Thus the gas is let off and the beast relieved. *Prevention* is, however, far better than cure. This is effected by allowing animals when first turned into clover pastures to remain but an hour or so at a time until they get accustomed to it, and will not eat so ravenously as to overload their stomachs. Calves brought up by hand are liable to similar attacks, brought on by indigestion and the fermentation of the food in the rumen.

Harvesting Pea-nuts.

The following is from the Report of the Department of Agriculture for 1868: "The time for harvesting the crop is from the 15th to the 30th of October, immediately after the first frost. When the crop is forward, or when it is an object to get a portion of it early in market, the operation may be commenced in the latter part of September; but the longer the vines continue to grow, the greater will be the number of sound pods. Select a time when the weather is settled and favorable, and with three-pronged hoes loosen the vines along the rows. Hands follow the digger, pull up the vines, shake the dirt from them, and leave them in the same place. In dry weather they will be sufficiently cured in two days to be shocked. Showery weather, though it may somewhat delay the curing, does no injury. In shocking, provide stakes 7 feet long, made sharp at both ends; then lay two fence rails on the ground as a foundation, but with supports underneath to afford free access to the air. The stakes are stuck in the ground at convenient intervals between the rails, the stacks built up around them, and finished off by a cap of straw to shed the rain. The diameter of the stack is made to conform to the spread of a single vine. After remaining about two weeks in the stack the picking should be begun, taking off none but the matured pods. These are to be carried to the barn, and prepared for market by completing the drying process, and then fanning and cleaning. The most tedious part of the work is the picking. An expert discriminates at a glance between the mature and immature pods, but cannot pick more than two and a half or three bushels per day. A machine to perform the operation would be a most valuable invention. Unless the management in the barn is carefully conducted, there is great danger, where there is much of a bulk, that the peas will become heated and mouldy. The condition in which the early deliveries are often received at market renders this caution quite necessary. In fact, there is as much slovenliness in the handling of this crop as there is in regard to any other; perhaps more, for the reason that so many inexperienced persons engage in the culture every year. Until the pods are thoroughly seasoned, the bulk should be frequently stirred and turned over. A certain classification, in respect to quality, obtains in pea-nuts as in every other article of agricultural produce. The descriptive terms in general use are 'inferior,' 'ordinary,' 'prime,' and 'fancy;' but these are not so definite as to admit of no intermediate grades. Assuming *prime* to be the standard, and that the *prime* are $2.75 per bushel, then *inferior* will be worth, say, $1 to $1.50; *ordinary*, $2 to $2.50; and *fancy*, $3. Seed pea-nuts always command an extra price, ranging from $3.25 to $3.50. These were the current prices for the crop of '68."

Bee Notes.—*By M. Quinby.*

The Apiary in August.—Where there is buckwheat, bees begin to store the honey, from the 1st to the 10th of this month. Boxes containing white honey should be removed even if not quite full. Four pounds white honey are worth as much as six of dark. Very little buckwheat will discolor it badly. Where there is no buckwheat, no addition to the stores of the apiary need be expected, save, perhaps, in a few exceptional localities—the western prairies, for example. So, as a general rule, unless there is a prospect of buckwheat honey, all surplus boxes may be removed now. The combs will grow dark if they are left on. Boxes put on now will not be filled except under very favorable circumstances—you will only get the glass stained with propolis.

Look well to weak hives now, for they are in danger from the moth. Keep bottom boards clean. If weak colonies are in movable frames, give them a comb or two each, of sealed brood from strong ones. Look out for barren queens and queenless hives, supplying deficiencies where you find them. If in box hives, it is generally best to break them up and secure the contents. The same is true of badly diseased ones. It will sometimes pay to drive out such swarms, if there is buckwheat. A few combs made by swarms so driven into empty hives would be valuable another year. Examine colonies that have been divided as heretofore directed. If the division without a queen was strong, drone comb will have been made while rearing queens. Remove it, replacing with empty frames, that worker combs may be constructed. Honey in such drone comb is of good quality and may be of use to feed in winter if not wanted for the table. The season here has thus far been propitious, and possibly too much honey may be stored to leave room for breeding. The only remedy with box hives is surplus boxes furnished with plenty of white comb to draw the bees into them. In case of movable frames, control the matter by removing full combs and replacing with empty ones. Put empty combs near the center alternately with full ones. If it is desired to raise Italian queens late in the season after the native drones have been destroyed, provide Italian drones by removing the queen from a strong stock and putting her in a large, movable comb hive. Put in the same hive with her such combs from other hives as contain Italian drone brood, and after eight days remove all queen cells that may be found.

Bee Books.—"W. P. M." asks: "Which is the best and most practical work on the Honey-bee?"..... Those who desire a scientific work on the Honey-bee would be much pleased with Langstroth's. There is little but practical teaching in "Quinby's Bee-Keeping Explained," advertised by O. Judd & Co. Langstroth's book gives a description of his hive, but I do not know who has it for sale.

Italian Bees.—W. P. Moore, Richland, Tenn., would like to know, "1st. The comparative value of Italian and native bees. 2d. Whose or what hive is best. 3d. What sort of shelter-house or place is best suited for hives.....(1.) After nine years' experience with the Italian bee in the same apiaries with the natives, and in every variety of season, I can speak decidedly in their favor. I consider them at least one-third better in every respect when properly managed. For instance, their tendency is to store so much honey that the space for rearing brood is too much reduced, and it is necessary to use some sort of a movable comb hive so that full combs of honey can be removed, and empty ones put in their place, to give sufficient room for brood. Thus, by intelligent management they may be induced to gather more than the usual amount of honey and increase largely at the same time.

(2.) If increase of colonies is more desired than surplus honey, a simple movable comb hive would be most suitable; but when surplus is the main object, the hive described in the June No. of the "*Agriculturist*" will answer a better purpose than any I have ever used.

(3.) I do not approve of any kind of a bee-house as a shelter for bechives. Let the hives have separate stands but a few inches from the ground, with substantial roofs to protect them from sun and rain.

Straight Combs.—J. F. Brill, Kanawha Co., W. Va., says that to induce bees to build straight combs in common box hives, he draws lines across the under side of the top board, with melted wax, applied by means of a sash tool. The bees build their combs upon these lines of wax and make them straight.—I tried the method thirty years ago and found, like most other plans, it would not prove a success in every case. The bees will follow the lines in perhaps three-fourths of the instances.

Do Bees Freeze?—S. P. Creek, Olney, Ill., wants a decision on the following: "Do bees 'freeze up' and become torpid during any part of the winter, and then thaw out? Some of us contend that they do not; others that they do, and that the honey and wax take the 'frost out of them,' just as the earth takes it out of some kinds of vegetables."....It is surprising that any one with any experience whatever with bees, should maintain the above absurd view. It requires but a little intelligent observation to convince the most obtuse, that bees do *not* freeze up in cold weather, and thaw out in spring. The consumption of the honey does considerable towards *keeping* "the frost out," but when bees are once thoroughly frozen, they will not revive. I would ask those who believe that bees freeze up what becomes of the 20 or 25 lbs. of honey that disappear during winter, if the bees are torpid during that time?

Tobacco in August.

Tobacco, as cultivated in the Northern States, if well established by the first of July, in rich, mellow, clean land, is doing well. By the first of August it will be surprising to witness its rapid growth. The great leaves are rapidly concealing the ground; the plants stand, each a pyramid of tender, vivid green leaves, and as the breezes turn up the paler nether sides, the crop strikes one as very beautiful.

Worming.—With the growth and fairness of the crop the farmer's anxiety increases. The worms must be watched, the sphinx, or hawk-moth, will lay her eggs nightly, and the quickly hatched worms will eat voraciously. Young turkeys are a help in keeping them down before the plants are large, but they damage the great, brittle leaves. Hand-picking is the only security; though the use of strychnine in honey placed in the great bell-like flowers of the *Stramonium*, or "Stinkweed," or in those of the yellow Evening-Primrose, will destroy the moths. The flowers may be picked, baited, and set about the borders of the field.

Topping should begin as soon as the plants have attained sufficient size. After a little experience the proper hight at which to top will be easily judged of. The operation consists in breaking off the flower stem at such a hight that the leaves will be best matured, or ripened. The plants vary in vigor, and some attain sufficient size as early as August 1st, others not until late in the month. The earlier, the higher the topping should be. In the Connecticut Seed-Leaf variety 12 to 16 leaves are usually left upon the stalk. They are not counted, but the place where the leaves grow rapidly smaller indicates the spot to break off the stem. This is usually between two and three feet from the ground. After topping, worming continues, and the breaking off of the suckers, or side

shoots, called "suckering" continues until the plants are ready to cut up. This is when the leaves are ripe—the veins swollen and turgid, the leaves harsh, not soft and pliable like growing ones, and if folded, the lower side out, will crack with a clean, brittle fracture. Should a considerable part of the field be like this, cut and hang up; but this work is usually done in September.

Horse Papers for Farmers.—No. 7

In casting about for a substitute for trotting speed, any horse-breeder who has given attention to the present condition of the American horse-market, will probably hit upon beauty of form and stylish action as the most promising features. Really handsome horses for private carriages, are so rarely seen, that it may almost be said they do not exist. If any one will take pains to examine the carriage-horses in the Central Park in New York, and at the various watering-places, he will acknowledge the truth of this statement. There are a good many well-grown, rather fat animals, with bushy manes, and large, curly tails, to which good grooms manage to give a tolerable appearance by dint of warm blanketing, and by curbing their necks into an unnatural position. But, strip these horses of their gorgeous harness, and lead them out with their halters only, and they will assume their proper stations as thorough-going lunk-heads. By nature, they generally have coarse coats, flabby muscles, defective joints, flat feet, short necks, big heads, and a clumsy action. Their movement is too often that of animals who find their own weight a sufficient burden. They are only accepted for their work, because they are the best that the market affords. A friend recently told me, that he had sent an experienced man all through New England, and as far west as Ohio, without finding for sale a single span of horses such as he wanted for his carriage. After having given considerable attention to the subject, I am satisfied that there are not in all New York City, five pairs of really fine carriage-horses; nor is the number likely to increase so long as it remains the custom with breeders to seek almost exclusively rapid trotting action,—a search that is very seldom successful, and that brings into the world a vast crowd of third-rate and fourth-rate horses, of very low average value.

The typical carriage-horse was well shown by John Leech, in some of his drawings for "Punch." Its most important condition is a large infusion of thorough blood. Such an animal is rather lean than fat; tall, muscular, and active. Its coat is thin and glossy; its mane and tail not too abundant, the hair being straight or slightly waving, and of the texture of silk. The pastern-joints, instead of carrying a cart-horse's tufts that require constant clipping, are naturally clean and smooth. The hoofs are large and well formed, and neither too flat nor too steep, though this is a point over which breeding has perhaps less control than over any other, indicating that it has received less attention than more conspicuous features. The legs of such an animal are short below the knees and hocks, are broad, as viewed from the side, and thin, as seen from the front or rear. The knee and hock joints themselves are large and bony, and free from puffs and bony excrescences. The legs above these joints are long, the longer the better; and the various muscles and sinews are clearly defined under the soft skin. The shoulders are very sloping, and the withers rise well into the hollow of the saddle. The back is short from the withers to the top of the hip, and long from here to the root of the tail, which is set on level with the spine, and naturally carried well up when the animal is in motion. The neck is long and muscular, but by no means thick or fat, and its crest is high and thin. In its natural position, without the help of the check-rein, it should be nearly if not quite level for eight or ten inches back from the ears. The ears themselves are long, thin, and active. The head small and not Roman-nosed; the eyes prominent and the nostrils large.

A pair of such horses standing from 15½ to 16 hands high, reasonably young, free from important defects, and well broken, could probably be readily sold for $10,000. If they were as plenty as they might be, they would still bring a fourth of that price. Such horses need no check-reins to keep their heads in position. The conformation of the shoulders, neck, and crest secures this. Such a horse's head is perfectly and evenly balanced in a position that we cannot hope to attain by any amount of checking and martingaling with the ordinary carriage-horses of the day. Every movement that such a horse takes is graceful and strong; his whole appearance indicates intelligence and nervous vigor. He cannot be ungraceful and he cannot be dull. He may or may not be fast. For carriage use this is of minor consequence. What is wanted first of all, is style, and a stylish action in moving heavy loads, which only great natural strength and vigor can make possible.

Of course, such animals as are here depicted are more nearly perfect than it will often be our lot to see, but the standard is one toward which it is always safe to aim. We can only hope to attain it by using means which can hardly fail to produce horses of more than ordinary value, and the more nearly we approach the standard, the higher the price that we may hope to get. Probably if two farmers were in a systematic way, the one to breed fast trotters and the other to breed such carriage-horses as are here described, the trotting man would raise more animals worth $5,000 each, than would the other; but he would produce ten or twenty times as many worth less than $500 each, and the balance of profit would be largely on the side of the carriage-horse breeding. I believe, in fact, that the *average* value at four years old would be fully twice as great in the case of the carriage-horses as in the other; while, of course, there would still be chances, by no means insignificant, of raising now and then a very fast trotter, and a good proportion of excellent roadsters. It is to be claimed for this sort of breeding that it has no greater element of risk than the breeding of Shorthorns or any other animals whose merits depend on a harmonizing of all good qualities. Where the only thing sought is a rapid trotting action, so many defects are disregarded that there is room for all manner of constitutional weaknesses to creep in, and it becomes a game of a few great prizes and many blanks.

It is hardly necessary to say that in breeding carriage-horses, it is our advice to use only the best thorough-bred stallions. This we regard as indispensable in all breeding, and we have dwelt sufficiently upon its importance in preceding articles of this series. This point being assumed, the key to success lies in the selection of suitable mares. The dam of a fine carriage-horse, or of any first-class horse of all work, should be bred rather than bought. That is to say, there are so few suitable animals to be found in this country that it would be shorter and surer work to breed any considerable number of them, than to hunt them up in the market. If anything less than perfection be the object, there are thousands of good mares with whom the chances of success would be tolerably fair.

An important consideration in carriage-horses is good size, and this must be sought chiefly in the dam and the grain bin. Strong feeding will always increase the growth of a colt, but there is some danger that he may grow to an ill-shape, if forced much beyond his natural development. The dam of the carriage-horse need not have more than one-half thorough blood. This much is essential; for the gamey look and high stepping action, the bony, muscular, stylish appearance that we have described, can hardly be had with less than three-quarters pure blood. As much more than this as can be attained without loss of size will be advantageous; but thorough-bred animals are rarely large enough for heavy carriage-horses, and are often deficient in the knee action essential to the most stylish gait.

My own ideas as to the best system of breeding for carriage use are derived from Frank Forrester, who was unquestionably our best authority in these matters. His theory, which seemed a reasonable one, was that, considering the large size and high action that it is desirable to have, and considering also the importance of infusing as much thorough blood as possible, without detracting too far from these qualities, the start should be made with the largest and most stylish mares that it is possible to get. In his opinion the French Percheron, or Norman, would best supply these conditions. The Percheron mare is very large, has a good shoulder, and has a particularly fine action. At the time of his death he contemplated importing six of these mares intending to cross them twice with thorough-bred horses. All of the first cross, except the mares selected for breeding, would have found a ready market at profitable rates. They would even have made fair, heavy carriage-horses and would have been capital for omnibus teams, etc. The second cross, (three-quarters-bred), he believed would be finer and more valuable than any other carriage-horses that it would be possible to obtain. But he would have selected the finest of these mares to cross again with the thorough-bred, hoping in their progeny to obtain the perfection of carriage-horses and weight-carrying saddle-horses.

These suggestions may be valuable to farmers who propose to make horse-breeding the principal item of their business, but their operations are of much less consequence, so far as the good of the country is concerned, than is the incidental breeding of small farmers who raise one or two colts every year. It is to such that my remarks are chiefly addressed, and it would not be within their power to provide themselves with Percheron mares for the sole purpose of breeding. Their wisest course is, to provide themselves for their farm work, with the best mares that their circumstances will allow them to get, securing at least blood-like look, fine action, and a good constitution. That is, securing precisely the sort of mares, that are best adapted for work in their own teams.

I cannot convey a better idea of the kind of mare it is recommended to use than by condensing a description given in "Herbert's Hints to Horse-keepers." In frame the mare should be so formed as to be capable of carrying and well nourishing her offspring; that is, she should be what is called "roomy." The form of hip that is considered the most elegant, where the tail is set on very high and the haunch-bone is nearly as high as the hip, is particularly unfit for breeding purposes. The sloping hip gives much

more room for the carying and the birth of the foal. The back, too, should be of a little more than the average length, giving plenty of bed for the foal and strength for the support of its weight. She must have four good legs under her and those legs standing, as a foundation, on four good, well-shaped, *large* feet, open at the heels, and concave underneath. "She should have a good, lean, bony head, small-eared, broad-fronted, well set on, upon a high, well-carried neck, thin at its junction with the head; high withers, thin, and, above all, long, sloping shoulders. A straight shoulder is an abomination; it renders speed impossible, and gives a rigid inflexible motion, often producing the bad fault of stumbling. She should be wide-chested and deep in the heart-place. Her quarters should be strong, well let down, long and sickle-shaped above the hocks. It is better that she go with her hocks somewhat too wide apart, than too near together; the former indicating power, the latter weakness of a bad kind."

The brood mare's health should be as nearly perfect as possible. This is the most important point of all. Accidental defects may be passed over, unless they indicate a constitutional weakness of the affected part. Spavins, ring-bones, and all bony enlargements are constitutional and may be perpetuated. Bad feet should be especially avoided, unless they have obviously arisen from bad shoeing. Broken-winded mares are out of the question, as they seldom breed. "Blindness may or may not be hereditary. * * * Simple cataract without inflammation undoubtedly runs in families, and when a horse or mare has both eyes suffering from this disease without any other derangement of the eyes, I should eschew them carefully. * * * * Nor should we breed from a mare which has any affection of the eyes, unless it be the direct result of an accident, such as a blow or a puncture."

Any farmer who has the natural eye of a breeder and a fondness for good horses, will recognize a mare coming up to this standard if he is fortunate enough to find one, and he will be wise not to breed from an animal which has much falling off from these points.

A California correspondent asks the following questions: "1. In a span of horses, ought the quicker one to be put on the off-side or on the near-side? 2. When they are hitched up, should the manes be toward the outside or the inside? 3. Are horses permanently injured by having had the colt distemper? 4. Are the Gad-flies that sting horses on the nose the same as those that lay their eggs on the horses legs?"

1. The quicker horse should be on the near-side, bringing the duller one nearer to the whip. 2. It is the custom to train the manes toward the pole. 3. The colt distemper is not permanently injurious, unless, from neglect, it is allowed to leave such an enlargement of the parts as to interfere with respiration. 4. We are not aware that the Gad-fly *stings* the horse. It is a different fly from the one which deposits its eggs upon the legs.

A Delaware correspondent accepts without question our statement that we should breed only to thorough-bred stallions, but maintains that the high price charged for service, sometimes $200, acts, in the case of the ordinary farmer, as a prohibition. The very high prices, from $100 upward, are charged only for the most celebrated horses. Very good thorough-breds that are a little too slow for the turf may be bought for from $300 to $500, and if they were sure of being well patronized, they could be profitably kept at a $10 fee. The only difficulty is that the farmers themselves do not realize the superiority of thorough blood, and unwisely take their mares to trotting stallions or to low-priced animals that have no other merit than cheapness. Let there be created a general demand for thorough-bred stallions, and it can be cheaply supplied.

Ogden Farm Papers—No. 8.

How easy it always is to raise a crop of corn before the seed is planted! Up to the day when the planting was completed, the prospect was as fair as could have been desired, and it was comfortable to look forward, over the easy cultivation, and the good time generally that was to attend the raising of the crop. No sooner, however, had the corn begun to sprout than the skies began to lower. While much of the country has been suffering from drouth, we have had, for a month after corn planting, such a succession of rain and fog,—and fog and rain, as is known only along the Naragansett shore. It has been the loveliest weather for weeds and grass; and the condition of the ground has been all that crows and pigeons and other lovers of sprouted corn could ask. On trying the smoothing-harrow, I found that we had so many loose clumps of turf on most of the field, that the teeth became filled with rubbish that did considerable harm if they happened to come in the line of a row of corn,—though it is but fair to say, that the small piece on which the experiment was made as the corn was coming out of the ground, has been the cleanest and the best looking part of the field ever since, in spite of the tearing out of a good many plants. Where the land was plowed last year,—the harrow has worked well, and has done great service. But for our very shallow plowing, we might have covered the sod deeply enough to leave smooth work over the whole field. The harrow having failed me, and my force being rather small, the bad weather got decidedly the better of me, and things looked rather desperate by the 20th of June. Either the corn must be given over to the choking grass and weeds, or the turnip planting and the last planting of corn fodder must be too long deferred. My neighbors who had planted in hills, and could cultivate both ways, were badly enough off, but their condition was happiness as compared with mine. If Ogden Farm were in a thinly settled neighborhood, one or other of our crops must have been finally swamped. Fortunately, at this time, the landscape-gardeners in Newport had just got through with their rush of work and I was able to call in the temporary assistance of twenty men and three double-teams. The way weeds have been cleared away, manure hauled out, and plowing done, has been decidedly cheering, and we can now go ahead with clear consciences and light hearts. The heavy spring work being fairly over, it will be easy enough, with any tolerable weather to keep the farm in order. This work, though requiring a considerable outlay within a short time, has cost no more than if few men had been hired for a longer time, while the cost and bother of superintendence were decidedly less; and there is no question that it is cheaper to hoe with a dozen men in one day than with one man in twelve days; for we save on a part of the field, eleven days growth of weeds.

Later.—A few days after the hoeing was finished, just as the weeds began to take a fresh start, I brought out the smoothing-harrow again for a final cleaning of the ground. Alas for my hopes! A single bout over corn 8 or 10 inches high, showed plainly enough that, in our case at least, the implement was a failure for the cultivation of corn. It destroyed too many of the plants for its continued use to be thought of. I have no doubt that the fault lay greatly with myself, and that more knowledge of the angle at which the teeth should be bent to suit the requirements of our particular soil would have rendered its use a success. But a fairly started corn crop is a costly thing to experiment with, and I have concluded to stick to the good old back-breaking way and hoe out the drills once more by hand,—letting the crop take its chances thereafter. This smoothing-harrow is a capital tool for many uses, and will prove a good investment without reference to the corn hoeing. Hereafter, however, I shall not be easily tempted to plant in drills. The saving of labor by cross-cultivating among hills is too important to forego.

It is getting to be a question with me, indeed, whether it will pay, on a farm where much labor is employed, to raise corn at all at the East. If there are too few hands to admit of root culture then corn may do very well; but if roots are to be raised, much of the work that the first hoeing of corn demands will pay better if applied to the preparation of land for roots, and the work of the second hoeing had better be spent in cleaning and thinning the ruta-bagas. This question, though, is by no means answered by our experience thus far, nor is it very definitely answered by the communications on the subject that one sees in the agricultural papers. It should have the more careful attention of all farmers with whom hay and live-stock are important items.

The case may be stated in this way. A good crop of eastern flint corn (60 bushels) is worth $75. It will cost that to buy its equivalent in other corn at present rates. The fodder will be worth about $10. This makes a total yield o $85 per acre. Now, an acre of good grass, receiving as a top-dressing applied during the winter, the manure necessary to produce 60 bushels of corn, will produce during the season (in three cuttings) three tons of *dried grass*. I use this expression in order to convey an idea of a very different and much better article of fodder than the fully developed hay that it is almost universal to grow,—grass cut when it begins to show its first sign of blossom, and when not more than two-thirds grown. Cut at this stage, it may be cut three times during the season; and the total quantity may easily be made to exceed my estimate. When the quality is considered, it is safe to fix its value at $60, while it will certainly cost $25 less for labor than the corn. In addition to this, the land will usually be in better condition as to richness than after the corn crop, and the danger of a fresh seeding with weeds will be lessened. In the mere matter of profit, the advantage seems to rest with the grass. And then, there are other things to be considered. First, the preparation of the land for roots and their cultivation, is much more likely to be well done if there is no big corn-field to require attention; second, haying can be commenced while the grass is in the condition indicated above, when, if postponed until after hoeing time, the growth is almost certain to be too strong, the stalks of the grasses too coarse, and the transformation of the nutritious juices into indigestible woody fibre, too far progressed. This last consideration alone may be enough to settle the point of "corn," or "no corn," while it is not to be forgotten that one who buys his feed in the market can often get

the equivalent of a bushel of corn for considerably less than this would cost,—especially when due allowance is made for the value of the manure left after consumption by animals, which is, according to Lawes' Tables, $6.65 from corn costing $40 per ton; $14.59 from wheat bran costing $32 per ton; and $19.72 from linseed cake costing $60 per ton.*

Still, for all this, the question is still an open one with me, as with most eastern stock farmers; and although the argument and the figures seem to be all one way, the force of old habits, the custom among our neighbors, and the disinclination to try novelties may continue for a long time to maintain the supremacy of "King Indian," even at Ogden Farm.

So long as corn is to be raised, it is very desirable to devise some means by which the delay caused by cross-marking for planting may be avoided. It has been suggested that an apparatus may be made by setting two wheels of equal diameter at a proper distance apart, to mark the rows in one direction, and to put studs on their rims, to mark the proper distances of the hills. Guide-rods, carrying light chains, could be run out from each end of the axle. The first row should be marked out absolutely straight; then, commencing at one end of this line, with one stud of each wheel directly under each axle, the marker should be moved across the field on the line of the row. The studs will mark the positions of the hills for the first two rows. In returning, for the third and fourth rows, let one of the chains hang directly over the second one, and set the studs exactly in range with the hills first marked. Very little care will be required to lay off a whole field in perfectly regular check-lines.

During the month of June our soiling was temporarily suspended. What with the poverty of the soil, its foulness, and the winter-killing that our open season caused, the clover field that was laid down last year (as a temporary make-shift and without manure), was not worth mowing, except where sea-weed had been applied as a top-dressing. The only thing to do was to feed off what clover there was, which amounted to a good deal, and to clip the white weed with a mowing machine. As soon as the rye became too coarse for feeding, the cows were turned on to the unmanured clover, and there is a fair prospect that it will carry them through until the sowed corn is ready. This will enable us to seed a part of the first and nearly all of the second growth of rye, and to cure for hay all of the oats provided for soiling.

This illustrates one of the safe-guards of the soiling system. The provision of fodder may be made as bountiful as you please; and there will be no loss, for every thing that is not consumed can be cured and stowed away for winter feeding. Oats cut at any time before they get beyond the "milk" state, seem to be as good as the best hay for winter use.

We are just commencing to keep a record of the weight of milk given every morning and evening by each cow. A printed blank for each week is tacked against the wall, and a lead-pencil hangs near it. As each cow is milked, the pail is hung on an ordinary spring scale. The pails being of uniform weight, it is easy to make the record sufficiently accurate for practical purposes. At the end of each week the total yield for each cow is footed up and divided by seven for the daily average. The total weekly yield of the whole herd is also recorded. The utility of such a record, especially if continued for a series of years, will be great. It will show:—1. The performance of each animal in her different conditions, and especially the degree in which she holds to her milk towards calving time. 2. The relation that the progeny bears in its milking qualities to its dam. 3. The milk-producing quality of the progeny of certain bulls. 4. The effect of different kinds of food, and of different systems of feeding, on the production of milk. 5. By comparing the weekly yield of milk with the weekly production of butter, the effect of feeding can be determined in regard to this latter.

The practical results of the knowledge thus obtained will be valuable. We shall know which animals to sell and which to keep; which bulls to breed from; which families to depend on for the final herd, and what methods of feeding it is best to pursue in winter and in summer,—this will be especially valuable as showing the relative advantages of soiling and steaming, as compared with dry feeding and pasturing, and the relative value of corn-meal, wheat bran, etc.

* Lawes' estimates are in *gold*, and the cost of the feed in *currency*.

Our present oat field stretches quite across the farm, and occupies portions of the land that was planted to corn in '68 and '69. Last year, the cornfield of '68 was occupied by ruta-baga turnips, for which a heavy dressing of manure was applied. This land has never been deeply plowed, and neither tract was manured this year. The oats are decidedly the best on the older tract. This is partly due, no doubt, to the double cultivation and manuring; but certain spots on the corn land of last year indicate that a still greater effect is to be ascribed to the depth of the plowing; for, wherever the clay turned up from the subsoil is visible, the oats are small and light-colored. It becomes more and more evident that our subsoil must be brought into good condition by degrees, and that it will be several years before it can be made to render good service at the top.

Where this deeply plowed land has been manured this year, the result is much better, and the fodder corn planted upon it looks very well. It is worthy of note, that wherever in the corn crop of the present year the rows strike the dead furrows, the growth is extremely small and yellow; the moment they leave these and touch the surface mould, the growth is dark and luxuriant. While I have been in every instance disappointed by the results of deep cultivation, I have been more than satisfied by the effects obtained by all operations that are confined to the immediate surface. On our poorest grass land, where little beside wiry grasses and sorrel grows, (or, at least, is noticeable), a copious dressing of stable manure brings into prominence the best of the natural grasses, and makes a crop that pays well for mowing and pasturing. At the same time, the ability to withstand drouth is vastly increased. This is by no means to be considered as establishing a general rule; only as indicating that the subsoil of Ogden Farm, which has been for years water-soaked and deprived of all atmospheric action, is yet so crude as to be little better than an absolute poison to cultivated plants. Now that the water has been drained away, and the air can have access to do its wonderful chemical work, there is no doubt that, after a few years, the nose of the plow may be safely sent some inches deeper. As, little by little, the roots of the clover and other crops find their way into the subsoil, they, too, will add to its fertility, and, on their decay, will leave inviting channels down which future roots will go to make a better, and, in its turn, a still more ameliorating growth. Until the good day comes when I can plow deeply myself, I shall do the best work I can near the surface, and shall continue strenuously to advise other farmers, whose subsoil is not thus defective, to plow as deep as possible,—satisfied that Deep Plowing is the Golden Rule of good farming, and that such exceptional cases as mine by no means disprove its general value.

I have recently made a tour among some of the breeders and importers of Jersey cattle in Massachusetts, hoping to find some choice animals for sale at a moderate price. In this I was disappointed. The inquiry for this breed, which my own correspondence had indicated, seems to have been even more active there. The demand from the West is increasing, and there were several large orders being filled for California. For the few cows that I especially coveted, I should have had to pay no less than $1,000 each, so I came home with only a very choice yearling bull, for which I paid a round price, and $200 worth of eight-months-old heifer. These high prices, however, attach only to choice animals; second-class stock, such as is brought by the ship-load, on speculation, from the Island of Jersey, is sold at very moderate figures, and, in my judgment, is very dear at the price. These speculators' lots are generally picked up from the cheap refuse of the Island, and are sold here to the large class, who attach more value to the simple fact of importation than to careful and judicious breeding.

I was for a long time perplexed by the failure of a valuable mare to get with foal. She is thirteen years old, and probably has never bred. After passing a year with a young trotting stallion without result, she came into my possession, and though frequently served by Dallas through two seasons, she continued to come regularly in heat. I searched high and low among the horse books for something applicable to the case, but I failed to find, not only this, but anything of value connected with the management of horses and mares at the time of serving. There is no reason why the literature of agriculture should be deficient in so important a particular, and those whose knowledge and experience qualify them to give the much-needed instructions, can render no better service than by so doing. Practical books failing me, I applied to practical men, and was at last told by a knowing old stable-keeper, to turn the horse and mare loose together immediately after the first union. The mare's shoes were removed, and immediately after the service the fetters and both halters were taken off. The animals were in a large barn-yard, with high fences; they were together for nearly half an hour. Owing to the restlessness of the mare, Dallas' most determined efforts were evidently unavailing, and they were separated. As it was very late in the season, the fact that the mare did not again come in heat was not taken as an indication that she had conceived. We have been watching in vain for her to come in heat again this spring, and have at last discovered the movements of an active fœtus and every indication of approaching parturition. Precisely how much this circumstance teaches, it is impossible to say. There was no complete union after the usual one at the halter, and such unions had failed steadily for two years. My theory is, that the presence of the horse and the mental effect of his repeated efforts caused the result.

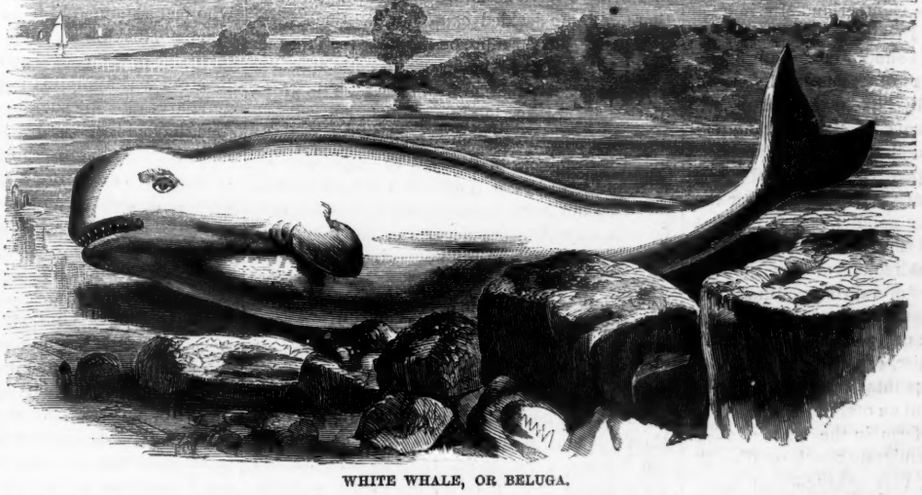
The Sea-Otter.

Our North-west coast produces several fur-bearing animals, and among the most valuable is the Sea-Otter (*Enhydra marina*), an animal which, while it is classed with the Otters, has many of the characters of the Seal. It is thus described by Baird: "The head is short and very broad; the nose obtuse, with a naked muffle, and with three rows of stiff, horny bristles. The digits of the fore-feet are very short and firmly bound up in a thickened membrane, which on the palmar surface is naked and granular. The hand is divided into four lobes, representing the digits, excepting the third and fourth, which are bound together and bear two claws above. The hind-feet have the outer toes longest, the rest descending from the fifth to the first; the under surface hairy, except under the balls of the toes. The hind-feet are directed much further backwards than in the common Otters, in this respect resembling the Seals, except that in the latter the hind-feet are crescentic in shape, owing to the middle toes being shorter than the lateral." The animal is about 6 feet long, and when fully adult is of a jet-black color. Sea-Otters were formerly abundant upon the coast of California, and are occasionaly met with as far South as Monterey, but they are now only plentiful much further North, in what was formerly the Russian Possessions, and now our Territory of Alaska. The best skins have been sold as high as $100 each, and are greatly prized by the wealthy Chinese. The fur on a first-class skin is so dense that when strongly blown upon, the hairs cannot be sufficiently separated to allow the least portion of naked skin to be seen. The Russians derived a large revenue from the sale of these skins, but it is said that the animals appear upon the coast in much smaller numbers than formerly.

SEA-OTTER.—(*Enhydra marina.*)

The White Whale, or Beluga.

What is called the White Whale, though it belongs to the whale order, is placed in that subdivision of it which includes the Dolphin, Sea-Unicorn, the Porpoise, and the Grampus. They differ from the Right and Sperm whales in many points; notably in having a proportionally smaller head, and in having teeth in both jaws. The White Whale (*Delphinus leucus*, or *Beluga borealis*, of some authors), is very abundant in the Arctic ocean, and is frequently found much further South. It is not rare in the St. Lawrence, ascending the river as far as Quebec. It is from ten to twenty feet in length; of a brownish color when young, but when full-grown, is nearly pure white. The tail is three feet broad and very powerful; by its means the animal is able to dart with great rapidity, and it is remarkably agile for so large an animal. These whales, or white-fish, as the whalers call them, follow the ships in large herds, showing the greatest boldness, as if conscious of their ability to escape pursuit. Their appearance as they tumble about, is described as very striking, their white bodies appearing in sparkling contrast with the dark water. Being so active, these animals are but seldom caught by the whalers, as the small amount of oil they yield is not sufficient to compensate for the time and trouble required in the capture. They are, however, of great importance to the inhabitants of the Arctic regions, who depend upon them for a large share of their food. Its habit of ascending rivers allows the Beluga to be caught with comparative ease. When the animal is found to have gone up a river or inlet, a strong net is stretched from bank to bank and chase is given in boats. The animal endeavors to escape to the sea, but its progress is stopped by the nets, where there are other assailants lying in wait for it, ready to despatch it by means of spears and other weapons. The skin of the Beluga, when tanned, makes a soft but remarkably strong leather. The flesh is highly prized as an article of food, though it is too oily to be acceptable to palates unaccustomed to Arctic fare. The oil is valuable for burning, the sinews are used as thread, and some of the internal membranes serve as a substitute for window glass. The "living whales" which figured so largely among the attractions of Barnum's Museum, were of this species. One, which was some time ago kept in an Aquarial establishment in Boston, became tame enough to be harnessed and draw a light boat containing a young lady around the large tank in which it was kept.



WHITE WHALE, OR BELUGA.

AFTER HAYING.—It has come at last. The words have often been heard and some promises have been made to the boys, that were to be fulfilled at this date. The hay is harvested, and they want to go fishing, or to the beach, or to a picnic, or fair. By all means let them go and have a good time; and let your blessing go with them, if you do not go yourself. Then you promised yourself if there ever came another dry time, you would get at least a hundred cords of peat out of the pond hole, that is not dry more than one month in the year. See that the promise is fulfilled to the letter. You can no more afford to cheat yourself out of a good thing than the boys. You have done using the reaper, the mower, the horse-rake, and tedder. Do not let them lie around in the field or under the shed, but put them carefully in the loft where they are to remain until next season. Put them up and oil them, ready for use to morrow. Then top-dressing your meadows and your pastures is in order. And the

sooner you put on the compost after haying the better for the roots of the grasses. If you are doubtful about this matter take a dozen loads out of your barn-yard and try it upon an acre of run-down meadow. You will make a new discovery and be converted. Then whether you top-dress or not, carefully guard your after-math against all cropping. To crop does not pay.

Walks and Talks on the Farm—No. 80.

The following letter, intended for me, was sent to the *Agriculturist* office, and the editor, who takes as much interest in young men as I do, wrote on it: "Here is a sensible boy, pray notice him."

"NASHVILLE, Tenn., June 5, 1870.

"DEAR SIR,—I have just been looking over your 'Walks and Talks', in which I find some advice to a man who has bought an overgrown Southern farm, and I thought it might not be improper to ask your advice about entering into a farming life. I intend going into details, so that you may better understand my case:

"I am 17 years old, stout frame, and have just finished my course of study, and received my diploma in the High School of this city, and wish to go on to a farm or market garden, as soon as possible; my idea being that the more time I spend doing nothing around home and town, the less I will have to get started and get broken into the routine of farm labors, and the less will be my chance of procuring a suitable farm. Besides this, if I intend to settle on a market garden, I should do so immediately; as manure now can be had for the hauling, and it will in a few years, probably, be as high as in Northern cities. I have a garden within the corporation of the city, of about one-quarter acre, on which I spend all my spare moments in raising all kinds of vegetables, and with whose culture I am perfectly acquainted. I have hot-beds and cold-frames at work in winter, and raise lettuce and other vegetables as recommended by the N. Y. gardeners. I read all the works on gardening and think I understand it. I also like and understand fruit culture, and desire to form an orchard on the Cumberland Mts. in East Tennessee, on which I could raise crops to pay expenses until the fruit should come in bearing.

"There are numbers of farms in the South which are being rapidly bought up by northern men, and greatly improved. My father is agent for ——, and desires much to move from the city where it is such expensive living, and settle on a farm in the country. He travels over the country, and thus has a good chance to find out the desirable farms. We have thought of moving to the northern wheat regions of Texas, or on some of the new routes of railroads of the West. It may be well in consideration of the question, to state that one or two thousand dollars is about all we can raise, except by borrowing. Considering all these points, what do you think we had better do; plant an orchard; commence a market garden; or farm in the State near or far from the city, or emigrate South or West?"

This is certainly a very sensible and well-written letter. But I can give no advice in regard to where the father had better settle. It is too serious a question to be decided without a knowledge of all the facts. So far as the young man is concerned, I think he would do well to stay where he is, and continue to raise garden vegetables. He seems to have a taste for this. I would continue to cultivate the quarter of an acre already occupied. Such a garden, in crops this year, and well cultivated and manured, will afford more profit next year than several acres of land never before used for a garden. I would advise him, above all things, not to get too much land. Make what he has as rich and clean and mellow as possible. Get the crops in early, and spare no pains to make them grow rapidly. Nearly all our choicest garden vegetables are the product of long-continued, high culture, and need the richest of soil and the most careful, artificial treatment. This idea must be constantly before the mind. Mr. Lawes found that land which would produce an average of 16 bushels of wheat every year for over twenty-five years, without manure, and still continues to bear good wheat without any apparent diminution, would not produce turnips, after the second crop, much larger than radishes. It was found, too, that turnips to produce good bulbs, require a much more liberal supply of available phosphates and carbonaceous matter in the soil than wheat—notwithstanding the fact that the grain of wheat contains a much larger percentage of phosphates in its ash than the ash of turnips. Many explanations have been offered for this well-established fact. Perhaps the true one, at least in part, may be that the grain of wheat is a natural product of the plant, while the bulbs of turnips are an artificial product—the result of high culture and years of selection. Naturally, the turnip runs to seed the first year, like wheat, but we have changed its character and must supply food adapted to its artificial requirements. And it is so with cabbages, cauliflowers, beets, carrots, parsnips, lettuce, onions, etc. We can use with great advantage an amount of manure for these crops that would utterly ruin wheat and barley. Of all men, therefore, the market gardener requires rich land and clean culture. If this young man acts on this idea, confines himself at first to a small plot of land, makes no doubtful experiments, is not in haste to be rich, but confines himself to such crops as are in steady demand, and that afford sure but moderate profits, and pursues the business with steady industry, he can hardly fail of success, and very likely will get rich.

For my part I am constitutionally indisposed to move. I have no faith in emigrating, unless there is some decided cause for it. Success or failure depends far more on the man than on the locality. If I could be more energetic and less given to procrastination in Texas than in New York, I am not sure but I would "pull up stakes" and move out there at once. The chief battle of life is with one's self. It must be fought day by day, and hour by hour, wherever our lot is cast, and I do not need to move one inch from this farm for opportunities of learning patience under provocation, and faith under discouragement.

A few months ago one of my neighbors brought a young Englishman to see me. He was a farmer's son, strong, healthy, and well educated; an engineer by profession. He had been looking for employment ever since he came to the country, but could not find a vacancy. What should he do? My neighbor asked me if I did not know of some one in the city who wanted a coachman? If he could get such a place as that he thought he would be in the way of seeing people and might find something better. He was out of money, and pretty much out of clothes, and wanted to be doing something. He thought if he should go to Canada he might find work. Said I, addressing the young man, "You are a farmer's son and must know something of farm work. You want some one to use their influence to get you a place in the city. Here in the country you can get work at the first farm you come to. And it is at any rate, quite as respectable to work on a farm as to drive a carriage, and your acquaintances will be at least equally intelligent and influential, and should any opening occur in your profession you will be quite as likely to hear of it, and much more likely to secure the appointment." He took my advice, and went to work steadily and faithfully on the farm. In less than three months it so happened that some engineering work had to be done, and the engineer in charge could find no one who understood some particular branch of the profession, and was anxiously inquiring for such a man. Our young friend's name was mentioned. He was examined on the subject, found to be just the very man they wanted, and was at once taken from the plow to a desk in the engineer's office with a salary of $85 per month, with a prospect of more by and by. Had he not gone to work he would probably have been still traveling from city to city, "waiting for something to turn up."

There is a general impression that farming requires very hard work. I do not know of any kind of *work* that is easy, but I would like to know where the specially hard work on a farm comes in. Take the corn crop; plowing the sod is sometimes rather hard work, but it lasts only a few days, and frequently, so far as mere strength is required, a boy will plow as well as a man. Harrowing, rolling, and marking are not very back-breaking work. Planting with a machine requires brains rather than muscle, and in planting by hand a boy fifteen years old will sometimes keep up with the men. He may not do as good work, but at any rate it shows that the men are not endangering their health with exhausting labor. And so with cultivating; a boy with a steady horse, provided you do not give him (as too frequently happens) the oldest, heaviest, and poorest cultivator on the farm, will generally keep up with the men.

Hoeing is *very* hard work; so hard that the men sometimes require a little cider to enable them to keep up with the women and boys, working in the same field. Cutting up the crop is also heavy work, but still there are few men who feel ashamed to have a boy keep up with them. Husking is such hard work that it is often left to the women and the boys. The same remarks will apply to the potato crop. Haying and harvesting are such hard work that the men must have higher wages and better fare. Riding on a mowing machine is not so *very* laborious, if it was not for the fact that the knives have to be ground and sharpened occasionally, and nuts screwed up and the bearings oiled. When I rake up hay with a sulky, steel-toothed rake, one of my little children sometimes goes with me on the rake, and apparently enjoys riding up and down the field as much as any of her city cousins would a drive in Central Park. When we had only one-horse tedding machines a man could use them without overtaxing his strength, but now we have *two*-horse tedders and we expect *one* man to drive both horses. Is it not hard work! Cocking, opening, spreading out, turning, and recocking, are not traditionally hard work. Pitching requires some strength, but the work may be greatly lessened and facilitated by the exercise of a little mechanical knowledge and common-sense. Unloading is down-right hard work, but we have good forks that do away with the necessity for it. Mowing away in a close barn is anything but agreeable, but in a commodious barn, with a hay fork, it requires a very short time to stow away a load.

In harvesting grain, binding is hard, and when there are thistles, very disagreeable work, and it is time we got rid of the latter, and had a machine to do the former. Pitching sheaves is comparatively light work. I would much rather pitch than load or unload. But where is the killing labor? Is it in thrashing? With the exception of feeding, if there is any really hard work about thrashing you will generally find that it is assigned to a boy! I had a man leave me because I would not let him have three men to help him on the straw stack. We were thrashing as we drew in from the field, and one man did the pitching. If we had been putting grain, straw, and all in a stack before thrashing, he would have required only a boy to help him. But to stack the straw alone required four men! Such is the force of tradition. Depend upon it, the hard work on a farm is a myth—an idea of the past, and no young man need hesitate about devoting his life to agriculture on account of the great labor and strength required. If he has health, industry, energy, perseverance, a cultivated mind, some mechanical ingenuity, and a good stock of common-sense, with a big heart in his bosom that will never allow him to neglect an animal, let him join the great army of farmers. We need such men, and I cannot see why his chances of success are not as great as they would be if he adopts any other business.

A gentleman asks me to give some account of Mr. Lawes' experiments in feeding sheep. I do not think it is possible to give a satisfactory account of them, without going into details, and this would occupy too much time. Mr. Lawes' original flock of sheep was common Hampshire Downs. He commenced to improve his farm and his sheep at the same time. And it is difficult to improve a flock of sheep without improving the land, or to improve the land without improving the sheep kept on the farm. He selected out his best ewes and put them to the best thorough-bred ram he could hire or buy. The first year I was at Rothamstead, he paid $300 for the use of a ram for the season, and this was done with no reference to selling sheep except to the butcher. That it paid him there can be no doubt. From having quite an ordinary flock of sheep he soon had a flock of several hundred that it would be difficult to beat. It was accomplished by raising good grass and clover, and by the use of thorough-bred rams and liberal feeding.

The first four series of experiments were made on these Hampshire Down sheep, and the object was to ascertain the best foods for *fattening* sheep.

In the first series, there were four pens, with five sheep in each pen. All the sheep were allowed as many sliced Swede turnips as they would eat; and in addition to this, the sheep in Pen 1 had oil-cake; those in Pen 2, oats; those in Pen 3, clover hay, and those in Pen 4, oat straw. The sheep were allowed all the oil-cake, oats, clover hay, and oat straw they could eat. The experiment lasted fourteen weeks (or more accurately, thirteen weeks and six days). At the commencement of the experiment the sheep averaged about 110 lbs. In Pen 1, the sheep ate $6\frac{1}{2}$ lbs. of oil-cake, and $89\frac{3}{4}$ lbs. of Swedes each per week, and gained 1 lb. 14 oz. Pen 2, $8\frac{1}{2}$ lbs. oats, $82\frac{1}{4}$ lbs. Swedes, and gained 2 lbs. $\frac{1}{2}$ oz. Pen 3, $8\frac{1}{4}$ lbs. clover hay, 116 lbs. Swedes, and gained 2 lbs. $3\frac{3}{4}$ oz. Pen 4, $\frac{1}{2}$ lb. oat-straw, $120\frac{1}{4}$ lbs. Swedes, and gained 1 lb. $5\frac{3}{4}$ oz.

The sheep would not eat the oat straw, and the gain in Pen 4 may be taken as showing the feeding value of Swede turnips alone. The most remarkable result, and what, I recollect, surprised all of us very much while the experiments were in progress, was the fact that the sheep did better with clover hay than with oil-cake. If the sheep had had clover hay as well as oil-cake, we should doubtless have had a much more rapid gain.

There is another fact of great practical importance as showing the advantage of inducing animals to eat more food. The difference between Pens 3 and 4, we may assume to be that the sheep in Pen 3 ate 1 lb. of clover hay per day more than Pen 4. And this 1 lb. of extra food gave 14 oz. of extra increase. Or in other words, one ton of clover hay, fed in this way, gave 250 lbs. of mutton! The great secret of profitable feeding is to get the animals to eat all they will, and then induce them to eat a little more.

The second series commenced in June, on a lot of Hampshire Down yearling wethers, that averaged about 120 lbs. each. Pens and numbers, same as before. The sheep in all the pens had all the *clover hay* they would eat, and in addition, Pen 1 had oil-cake; Pen 2, linseed; Pen 3, barley, and Pen 4, malt—1 lb. being allowed to each sheep per day.

Food consumed per head per week.	*Gain per head per week.* lbs. oz.
Pen 1, 7 lbs. oil-cake, 22 lbs. 2 oz. clover hay.	1, 15¼
Pen 2, 7 lbs. linseed, 20 lbs. clover hay.	1, 11¼
Pen 3, 7 lbs. barley, 20 lbs. 14 oz. clover hay.	1, 14
Pen 4, 6 lbs. 9 oz. malt, 20 lbs. 12 oz. clover hay.	1, 13

The sheep with oil-cake ate the most clover hay and gained the most. Barley seems to be nearly as nutritious as oil-cake. The other sheep did not gain quite as much as those fed with the oil-cake, but they ate less clover hay.

It should be recollected that the experiment was made during the summer months, and that the sheep were confined in pens and had nothing but *dry* food and water. They drank large quantities of water, so much so that a Member of Parliament opposed to the malt tax and who came to see the sheep during the experiment, expecting to find those having malt gaining much faster than those having barley, suggested that the sheep were drinking altogether too much water, and persuaded Mr. Lawes to curtail their allowance. This was done for one or two weeks, but the scales showed that the sheep knew more than the M. P., (though one of the leading farmers of England,) and after that they were again allowed all they would drink.

I believe it would always pay to let sheep have a rack of hay in the field while at pasture, especially in rainy weather when the grass is green. It is an old saying that "sheep like roast meat rather than boiled."

It is worth mentioning, that the remainder of the flock from which the experimental sheep were selected, was turned into a forty-acre field of rich, highly manured clover, and had besides, 1 lb. each of oil-cake per day. The whole flock was weighed again in eleven weeks and had gained on the average over $3\frac{1}{4}$ lbs. each, per week. One of the sheep gained 44 lbs. in the eleven weeks. There is nothing better to fatten sheep than rich clover pasture, and *a little oil-cake twice a day in addition!*

The next series of experiments was made with turnips alone, grown with different manures. The sheep were ewe lambs, about 9 months old, and weighed about 75 lbs. each. None of the sheep did well. Older sheep would probably have done better, but white turnips alone are not very fattening.

In one pen it took, in round numbers, 13,000 lbs. of turnips to produce 100 lbs. of increase; in another pen, 20,000, and in another pen, 28,000 lbs! and in the other pen the sheep weighed less after the ten weeks of feeding than at the commencement.

The next series was made to ascertain the relative value of barley and malt. It shows pretty conclusively that there is no special advantage in converting barley into malt for fattening sheep. The greatest increase was obtained from barley ground and steeped in water for twenty-four or thirty-six hours before feeding. In this pen, with a pound per day of steeped barley and mangel wurzel, the sheep gained over $2\frac{1}{2}$ lbs. each, per week.

As before said, these experiments were made to ascertain which is the best food for fattening sheep. And the result of the whole is that, provided the sheep have a liberal supply of available carbonaceous and nitrogenous matter, it makes very little difference what name it is known by! Much more depends on the character of the sheep than on the character of the food. We should aim to get well-formed, well-bred sheep, and then feed them liberally with such food as we happen to have. I have little doubt that sheep will fatten as rapidly on good timothy hay and Indian corn as they will on clover hay and oil-cake; *but* the manure from the latter will be worth *as much again* as from the former.

The next experiments were made to ascertain *which breed* of sheep, on the *same food*, would fatten most rapidly, in proportion to the food consumed. The experiments were made on Sussex Downs, Hampshire Downs, cross-bred wethers, cross-bred ewes, Leicesters and Cotswolds, forty sheep in each pen.

The cross-breds were derived from a Leicester ram, on a Sussex Down ewe. All the sheep had clover hay, oil-cake, and Swede turnips. The experiments lasted twenty weeks. The sheep ate and gained as follows:

	Food consumed by each sheep, weekly.			Av'g In. of each sheep weekly.
	Oil-Cake.	*Clover Hay.*	*Swede Turnips*	
	lb oz.	lb oz.	lb oz.	lb oz.
Sussex Downs	6 0½	5 12½	77 12½	2 0¼
Hampshire Downs	7 12¾	7 0	106 3¼	2 10¾
Cross-bred wethers	5 14	5 9½	82 14	2 3½
" ewes	5 9½	5 5	78 0	2 2
Leicesters	5 14	5 9½	83 13	2 3½
Cotswolds	8 1	6 14½	113 4	3 2¾

The average weight of wool per head was: Sussex Downs, 5 lbs. 10 oz.; Hampshire Downs, 6 lbs. 4 oz.; Cross-bred wethers, 6 lbs. 7 oz.; Cross-bred ewes, 7 lbs. $3\frac{1}{2}$ oz.; Leicesters, 8 lbs. $2\frac{1}{4}$ oz.; and Cotswolds, 9 lbs. $4\frac{3}{4}$ oz.

The Cotswolds not only gave by far the greatest increase, and the heaviest fleeces, but gave the greatest increase and the most wool *in proportion to the food consumed;* and when killed, they gave the heaviest weight of carcass in proportion to live weight—dressing 58 per cent, while the Leicesters dressed less than $54\frac{3}{4}$ per cent. The Cotswolds have less offal, and eat more food in a given time than any other breed; and *this is the reason* why they gain more rapidly in proportion to the food consumed. They have hardy constitutions, a good appetite, vigorous digestion, a quiet disposition, and little offal.

I can't but believe that great experiments are yet to be made in sheep, as mutton and wool producers. Flesh meat is a very costly article of food, even with the Cotswolds, which furnish meat at a less cost than any other animal, except a well-bred pig, and *it* requires over 15 lbs. of *dry* food to produce a pound of dry

meat. There is too much food used to support the vital functions, and too little to produce meat and wool. We must induce the sheep to eat more food. This cannot be done at once. It must be accomplished by years of breeding, keeping this object steadily in view.

We cannot now go into this matter. But there is one fact connected with Bakewell's improvement in the Leicester sheep that strikingly confirms my idea on this subject. Bakewell was undoubtedly a very skillful breeder, but I imagine he was, after all, somewhat of a quack. He made a great mystery of his operations, as quacks always do. He pretended to be able to put flesh on any part of the sheep desired. This was done by selecting those sheep showing a tendency to development in this direction, and continuing to breed year after year from those having the desired points. But the ground of his success, whether he knew it or not, was in furnishing his builders, the sheep, more bricks and mortar than they required. They were obliged to put the extra bricks somewhere, and when one of the sheep put it in the right spot he selected him for breeding. This ability to select the right sheep has been considered wonderful; but in point of fact, the great skill shown was in providing the sheep with the extra brick and other building material. This was done by liberal feeding. But the one fact about his breeding which interests me most is this: his sheep had little *inside fat*. Why? Fat is stored up in the animal to furnish the means of subsistence during periods of scarcity, just as bees store up honey during the summer for subsistence in winter. But Bakewell's sheep soon found that with them there was no period of scarcity. They had abundance of food every day during their lives, and they soon adapted themselves to this state of existence. There was no necessity for laying by a supply of fat, and so they used their daily food for their daily growth, and having a liberal allowance, they, of course, grew with astonishing rapidity. I take it that this is the secret of Bakewell's wonderful success in sheep breeding.

How often do Cows Drink?

The intimate connection between the amount of water which a cow drinks, and the quantity of milk she gives is so well known that we will not argue it. It is very important that milch

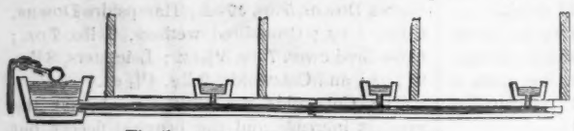


Fig. 1.—CATTLE WATERING APPARATUS.

cows should drink often. They cannot do this without great inconvenience when in the stable, unless by some automatic arrangement water is always before them. We have a very good barn in mind in which a trough about 5 inches wide runs across the front of all the mangers, conducting constantly a stream of fresh water. This is easily arranged if there is an abundance of water. A better plan is to have the water conducted in an iron or wooden pipe from a reservoir trough or barrel through the mangers. Small troughs or basins being set in connection with it at the same level with the reservoir. The accompanying engraving (fig. 1) shows this arrangement. When an animal drinks from one of the small troughs the water in all the small troughs and also in the reservoir trough, is lowered. But a floating-ball valve, seen in the engraving, is made to open and more water flows in. As soon as this reaches a certain level, the floating-ball by the same operation closes the faucet, and thus maintains the

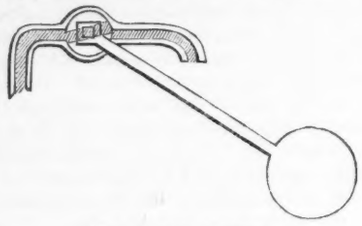


Fig. 2.—BALL FAUCET.

water at its level. The engraving, fig. 1, represents wooden troughs and pipes; iron may be used equally well. Figure 2 is an enlarged view of the floating-ball faucet, showing how the rise of the water will close the cock, and its fall will open it to cause more to flow in.

Warbles—*Œstrus bovis.*

Almost all of us are familar with the fact that large grubs live during a considerable part of the year in the backs of neat-cattle, coming out

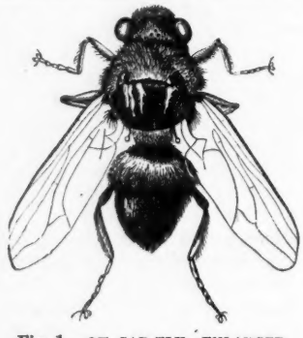


Fig. 1.—OX GAD-FLY—ENLARGED.

in midsummer. These are the larvæ of the Breeze, or Ox Gad-fly, which causes the cattle of some sections much annoyance late in the summer. The insect (fig. 1) is of the size of a large horse-fly, being nearly an inch in length, and is the largest and most beautiful of its kindred. The head is white and downy, the thorax is yellow in front with four black lines in the middle, black and gray behind, and the abdomen is ash-colored with a white ring and yellow hairs. The appearance of one or more of these flies throws a whole herd into a paroxysm of fear. The fly, when about to deposit an egg, lights upon the back of an animal within a few inches of the spine, and at the same instant inflicts a terrible sting, the skin being pierced and the egg deposited at one operation. The egg contains a little grub so near hatching, that it comes out so soon that the egg has never yet been seen in its place of

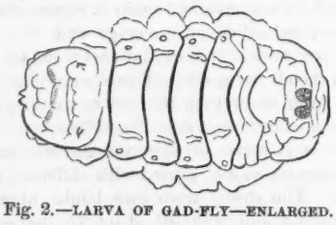


Fig. 2.—LARVA OF GAD-FLY—ENLARGED.

deposit, so far as we know. Either a fluid is contained in the egg, which, as it breaks, is let out into the cavity, or some poison is injected with the egg, which causes the intense pain the animals seem to feel, and the swellings which follow. On these occasions cattle seek the pools and streams, and will neglect the richest pastures to stand in the water. Oxen stung in the yoke are often hard to control, and a single fly will often stampede an entire herd. The flies select animals whose skins are soft and pliable—such as are called good handlers by the butcher. Hence it is that the presence of "warbles," as the sores on the backs are called, are regarded favorably by the butchers. They make, however, bad spots or holes in the hides. The little maggot thrives on the pus formed in the sore, and causes little or no inconvenience to the animal in which it has its dwelling. As summer approaches, it increases in size, see fig. 2; and a little past midsummer works its way out, and if not picked up by birds, falls to the ground, where it soon assumes the *pupa* state and remains thus for several weeks, when it breaks out through a little lid in its hard shell and commences its work of reproduction.

If farmers would be careful to kill all the warbles in the backs of their stock during the winter or spring, we would soon be entirely rid of them. The grubs may be killed in winter or spring by simple pressure. They may be killed by being pierced with a hot needle, or by injecting minute quantities of some mineral poison into the holes which remain open.

Water—Management of Flowing Water.

There is available water in almost every district, which may either be collected in reservoirs, or taken directly from springs at high levels, and conducted to the premises of individual farmers, or distributed among several. We were lately applied to by a subscriber in the central part of the State of New York, to advise him in regard to bringing water from a spring 100 feet higher than his house, to be "reservoired" at about 25 feet above the house, and thence distributed to garden, stock-yards, barns, dairy, and dwelling.

Several kinds of pipes are available. First, wooden ones, which are objectionable, because liable to leak under such a pressure, and their liability to rot and to become filled with confervoid growth called moss, or frog-spittle. Second, leaden ones, which are objectionable, because many waters act upon lead, dissolving just enough to act as a slow poison upon men and animals. Third, there is the tin-lined lead pipe, or "patent pipe," as it is called. This is free from the objections named to lead pipe, as the tin is not acted upon, and the water does not touch the lead. It is, we suppose, somewhat more liable to bruise and flatten by rough usage than lead pipe of the same strength, but with reasonable care, this is not a serious objection. Both lead and tin-lined pipes are likely to be flattened. Any pipe so flattened cannot be opened again to its normal diameter, but the "goose-knee" must be cut out and the ends united by soldering. Fourth, we have the galvanized, wrought and drawn iron pipe, which is coated inside and out with zinc. This pipe comes in long sections which screw together. The zinc protects the iron from oxydation, but is, to a considerable extent, worn off and acted upon, producing in many cases, insalubrious effects, but not so dangerous as lead. Iron pipe rusts rapidly, and lasts usually but a few years.

Fifth, glazed earthenware pipes are sometimes used, and are especially agreeable as conconductors of water for drinking purposes; for though at first soft water will be hard, it will

grow soft after a while, and remain very pure. These are laid in short sections, the end of one entering an enlargement in the next section, and the joint being closed with cement. Properly laid these pipes stand a pressure of 25 to 40 feet

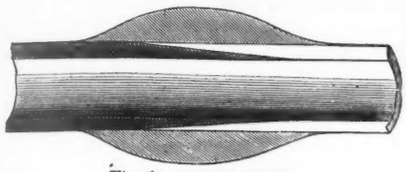


Fig. 1.—WIPED JOINT.

without leaking or bursting. It is necessary to use the glazed pipe, or moss would be liable to accumulate within, which, in time, decays and contaminates the water.

The cost of the lead pipe is usually about 10 or 12 cts. per pound; now it is much cheaper in New York, extra strong inch weighing 4 lbs. 12 oz. per foot; that of the tin pipe cased with lead 27 cts. per pound, with a discount when considerable amounts are purchased, extra strong inch, weighing 2 lbs. 6 oz. to the foot.

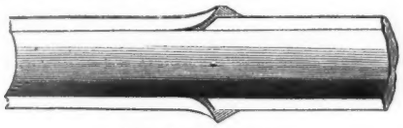


Fig. 2.—CUP JOINT.

That of the galvanized iron pipe varies with the size, inch pipe being about 18 cts. per foot, and the three-quarter-inch pipe half as much. The services of a good plumber, gas-fitter, or machinist, would, of course, be desirable, for either of these pipes, but any blacksmith can manage to lay and make the connections with the iron pipe if he has tools to cut threads and nuts where connections are made. There are two common kinds of joints used for connecting lead pipe, viz.: "wiped joints" and "cup joints." The latter are made as shown in fig. 2. One end is opened forming a cup, the other is rasped to a conical form. The contiguous surfaces are scraped clean, placed in position, and carefully soldered. A good tinner will do the job well. Care being taken not to melt the lead too much so as to weaken the pipe. A wiped joint is shown in fig. 1, and can only be made by a practised plumber, and is much neater, stronger, and better than a cup joint. This kind is preferable for the lead-encased block-tin pipe, for with the cup joint a little ring of lead is almost necessarily exposed to the action of the water. There is, however, a patent brass joint, which should be used with the patent pipe, as this is easily applied and presents only a tin or tinned surface to the water.

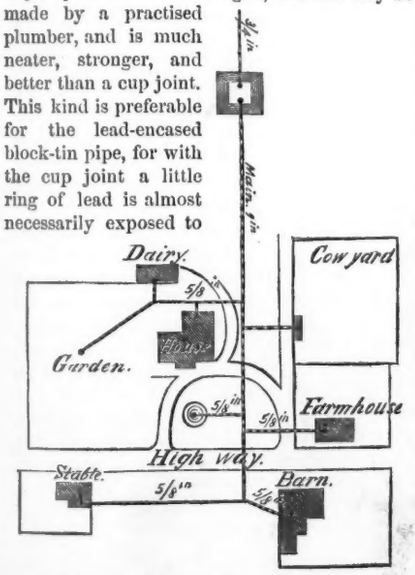


Fig. 3.—PLAN FOR DISTRIBUTING WATER.

We assume, in answering our correspondent, that he can have the services of a blacksmith or of a tinsmith. He says his spring is 56 rods from his house, and that he can establish a reservoir 25 feet above the homestead. He wishes to use the water in his barns, cattle yards, stables, dairy, garden, and house. We think a $^{3}/_{4}$ or $^{5}/_{8}$-inch pipe of either iron or tin-lined lead pipe, weighing $1^{1}/_{4}$ lbs. to the foot, will deliver all the water wanted at the reservoir, there being an unobstructed flow all the time. If there be occasion ever to tap the pipe above the reservoir, it should be larger, of course. Below the reservoir, a larger pipe ought to be employed.

Our friend sent a diagram of his plan, which was to take the water to each yard and building in a separate pipe. This would be of no service, and add greatly to the expense. A main should be laid of inch pipe from the reservoir, as indicated in the diagram, (fig. 3,) to near the range of the lowest point at which the water is to be taken. The branch pipes should go directly from the main to the place of discharge, and be of $^{1}/_{2}$ or $^{5}/_{8}$-inch pipes, if a tolerably free flow of water is desired. Wherever penstocks with faucets occur, and the water is under considerable pressure, it is necessary to provide an air-chamber to act as a spring or cushion, so that when the water is suddenly stopped, it shall not jar and burst the pipe. This air-chamber is simply a piece of pipe about a foot long, near the faucet, turned perpendicularly up and closed at the upper end air-tight, while connection is open below; the air in it acts like a spring. Whether iron, galvanized iron, or the tin-lined lead pipe be used to bring the water to the reservoir, there can, we think, be little question of the superiority of the tin-lined for laying the distributing, main and its branches, as well as the pipes in the interior of a house.

The Rye Crop.—Its Profitableness.

Now that rye has reached the same quotations in the market as wheat, it is likely to be much more cultivated than it has been. The Eastern farmer, with his hard worn lands, where tradition affirms that wheat will not grow, is as well off as the prairie farmer with his virgin soil. If he will use the right rotation and manures, he is better off. For rye is more hardy than wheat, can be grown with less care, and is more uniformly a paying crop. I have the best piece of rye in town, five feet high, heavy, stout stalk, and heavier head. It is as much of a contrast with the thin, stunted crops of some of my neighbors as I desire to see. They sowed late, on exhausted land, used no manure and will get, not over five to eight bushels to the acre. That does not pay. It is a sorry sight to see such a waste of labor. I shall get thirty bushels to the acre on soil naturally no better. It was sowed upon a piece of ground in early potatoes last year. The potatoes came off in July, a sound crop, but not over sixty bushels to the acre, though pretty well manured with fish scrap sown broadcast. They blasted. The piece was plowed, manured with about a half ton of fish scrap, and sown to rye early in September. The grain came up well, and got well rooted before winter set in. Though the winter was open, and very little snow, with much freezing and thawing, it did not winter-kill. It had a good start in the spring, and pushed right along to maturity without any check. A strip a few rods wide at one end, was mulched with sea-weed in mid-winter. This mulched portion is indicated by a darker green, and a more luxuriant growth of stalk. Shore farmers cannot do a better thing for their winter grain than to give it a thin coating of sea-weed. The more recent it is from the shore the better. The roots profit by the salt. The old practice of sowing this grain upon exhausted fields without manure is bad for the soil, and still worse for the cultivator. Both parties are badly cheated. With a little fair dealing with the soil, remunerative crops may be taken, and the land be kept constantly improving. Rye does well with a green crop of buckwheat or clover turned in a few weeks previous to sowing, and if no manure is used directly upon the seed some such crop should be turned in. Some turn the sod as early as June, but this is of much less importance than early sowing. If the growth should be too luxuriant late in the fall, it is easily shortened by turning in calves. Rye should always be sown with a drill. It is a great safeguard against winter-killing.

Crimson Clover.—(*Trifolium incarnatum.*)

The clovers, as a class, are very attractive on account of their beautiful flowers and foliage, and from the fact that all classes of herbivorous animals from elephants to rabbits, are so fond of them. They are besides among the most valued agricultural plants for several other reasons on which we often descant. Among them all, perhaps none is more beautiful than the Crimson Clover, the one shown in the accompanying engraving which well represents its form; the blossom is of a bright, rich, crimson color. It grows much like Red Clover,

but is not so leafy nor branching. The plant is an annual if sown in the spring, and will produce a fair crop of hay the first season; but if sown in the autumn, though rather apt to winter-kill, if it lives, it produces fine early pasturage or a good crop of hay. Its growth is so rapid that it interferes seriously with any grain crop with which it might be sown, and hence is usually put by itself. It dies after maturing seed. Several years ago it was introduced and a good deal said in its praise, but its merits are not sufficient to cause it to be extensively retained in cultivation any where in this country, so far as we are aware. We have had several specimens sent us for a name; probably from seed accidentally mixed with that of other clover.

Uses of Salt-Marsh Sod.

A correspondent wants to know if salt-marsh sod is good for evergreens and other plants. As our shore readers have inexhaustible quantities of this sod within easy reach, we will state briefly a few of its manifold uses. There is a rude earthwork in sight of our windows thrown up in the war of 1812, and the well-preserved embankment is a standing monument of the excellence of salt-marsh sod for this kind of work. It is a spongy mass of vegetable fibre, and does not wash like gravel nor surface mold. But this tough sod, which is so durable in an embankment, and never rots when kept dry, becomes very tender and is easily knocked to pieces when put in the compost heap or otherwise treated to make manure. It is one of the best absorbents we have ever used in stables, privies, sties, and barn-yards. It is an admirable article of bedding for horses and cattle, absorbing large quantities of urine. When applied to this purpose, it should be cut in large sods, say a cubic foot in size, and dried in the sun for a few weeks and then removed to a shed or hovel near the barn where it is wanted. It is a good plan to keep a year's stock on hand; and the summer and fall are the best time to cut and dry it. Pack the floor of the stall as closely as possible with a layer of these dry sods, and cover them with the usual litter. The heat of the animals and the urine will decompose them quite rapidly. As soon as they are saturated, say in two or three weeks, throw out the wet sods and put in dry ones. The wet sods may be put into the sty to be worked over by swine, or thrown into the yard to be trodden by the cattle, or, better yet, put into the compost heap with fermenting manure, where they will soon go to pieces. This compost, of which at least seven-eighths are salt-marsh sod, we have used very largely for several years in a fruit and vegetable garden, and in the transplanting of evergreen and deciduous trees. Nothing can be better for evergreens, whether applied at the time of transplanting, or subsequently, as a top-dressing. It keeps the soil light and moist, and the fine fibrous roots penetrate easily in every direction. We have never seen a finer growth of Norway Spruce, White Spruce, Hemlock, and other evergreens, than that made under this treatment. It is also excellent for strawberries and all the small fruits. With salt-marsh sod, close by, we should never go a long distance to dig muck or peat for absorbents. It does not become so quickly available for plant-food, probably; but after a use of muck and peat for a dozen years or more, we decidedly prefer the sod for bedding in the stalls of animals, and regard it as quite equal to peat for compost to be used upon ordinary garden and field crops.

Stocking Large Ponds with Fish.

Massachusetts now claims the control of all ponds within her borders, above the area of forty acres. Until quite recently all ponds larger than ten acres were considered public property. Where the State is liberal it is an advantage to have this control of large ponds vested in the State. It is much easier for a company who wish to make improvements to get a lease from the State than from a dozen or more individual riparian owners. Recently a company of gentlemen at South Framingham, Mass., have leased Sakum Pond for the term of twenty years for the purpose of stocking it and its feeders with various kinds of fish. It is a beautiful sheet of water of ninety acres or more, with gravel beach, and wooded shores, in the immediate vicinity of the village. They have contracted for two hundred adult black bass and fifteen thousand young fry, and are to put in also landlocked salmon. As the pond is forty feet deep, there is little doubt that they will thrive if the bass do not exterminate them. The company we learn have raised a capital of $10,000, and are purposing to do every thing that is needful to make it an attractive place for fishing and for recreation. This is the first instance in that State, we believe, that a large pond has been leased in this way. This is a sensible thing to be done both for the lessor and the lessees. The State gets a large sheet of water stocked with the most valuable kinds of lake fish, and increases its food supply without cost to itself. The association of gentlemen get boating and fishing within a half-hour of their places of business, and a pleasant variety for their tables, at a very small cost. It is so near that they can take their wives and children with them to share their pleasures. This is much more economical than a summer trip to Saratoga or Newport, and more sensible than a month of solitary life in the Adirondacks or Maine woods, to eat salt pork and trout, and to be eaten by gnats and mosquitoes. Their example we think is well worthy of imitation. Pisciculture is attracting a good deal of attention all over the country, and there is every indication of an approaching fever. If it shall lead to the extermination of pickerel, mudpouts, and the coarser kinds of fish, and to the introduction of black bass, trout, and the other Salmonidæ, to the waters that are fitted to them, it will undoubtedly be a great benefit to the public.

Vitality and Propagation of the Scab Mite.

BY A. W. THORNTON, M. R. C. S., NOW OF CALIFORNIA.

SIR,—During the outbreak of scab in sheep, in New South Wales, Australia, in the years 1863–64 and 65, I devoted much time to the study of the disease, and more especially to the habits of the insect, which is generally supposed to be the cause of the disease; and as the quarantine of infected sheep runs, it was a subject of the utmost importance in staying the disease. I was led to take up the question, "How long will the scab insect live if removed from the sheep?" The result of these investigations (so far as I am aware) being new, may not be devoid of interest to your readers.

I procured on the 27th of April 1863 (the autumn in that country), some live *Acari*, and placed them in a glass cell, $\frac{5}{8}$ of an inch in diameter, and one line deep, such as is used by microscopists for mounting objects; in this cell, I placed five insects with some fragments of matter from the wool, but no wool; and placed thereon a glass cover and weight. I kept them in a room where there was no fire, and where the sun did not shine. Many severe frosts were experienced; the cell was opened for examination every day, which had the effect of giving fresh air to the insects; and the conditions of my experiments were more unfavorable to life than if the insects had remained in their natural habitat, or even if they had been in a piece of wool, rubbed off against a fence, or tree, where they would have had more food, moisture, and liberty. For two months the insects remained active, and apparently healthy, feeding on the matter in the cell. They then became somewhat lethargic, keeping close to the angles of the cell, and burrowing for a place to deposit the ova. A fortnight after, I discovered some young *Acari*, fully developed and active, and also some eggs which seemed to be dormant; as I could not discover any developement of the embryos in them. At this time I observed two of the original insects were dead, and the ovaries empty of germs; other young insects were developed, and old ones died. By the end of the 15th week, all the old ones had died, and there was a brood of lively, young *Acari*, and ten dormant eggs.

During my investigations I observed a female *Acarus* carrying an egg around the cell, searching for a place to deposit it. This insect I kept in view until it had deposited its burden. I removed this egg to a separate cell, and continued my observations on it for twenty-one days, during which time I could see the embryo being developed within the egg, from day to day; on the twenty-first day the investing membrane of the egg had broken and a perfect insect had crawled forth. I removed some of the progeny of the first lot of insects to some clean wool, and they propagated their species for a period of eighteen months longer; each successive generation becoming smaller, and less active, until they all died.

The following conclusions I have drawn as a result of long-continued investigation:—

Acari will live after being removed from the sheep and wool, for at least three months under unfavorable circumstances in winter, during which time they propagate their species in two ways: one portion being developed into life and activity rapidly, and the other being in the form of ova, which lie dormant for an indefinite period, but in a state to be vivified under favorable conditions of warmth and moisture. The insects having deposited their ova, die; but there is nothing to warrant the supposition that they may not live much longer under favorable conditions. The ova are naturally deposited in the skin under the concretions of matter, and while torpid are not affected by external applications; consequently, it is only the mature insect that is destroyed by dressing (dipping) sheep; and we do not yet know how long the ova may remain dormant and unaffected by the local action of remedies. The most successful treatment in Australia, was to repeat the dressing two or three times, at intervals of a week; one dressing being seldom found to eradicate the disease.

I have also come to the conclusion that the scab insect is not the cause of the disease, but the effect. And this conclusion is borne out among other facts, by a case reported to me by an investigating sheep owner, who introduced a number of the insects into the fleece of a clean, pet sheep, and yet that sheep never became affected, although the rest of his flocks were heavily scabbed; and I am further supported in this view by the fact that if *Acari* will live

two years (which I have proved), when protected from the weather, every wool-shed where diseased sheep had been shorn, would remain a nidus for the renewal of the disease during the next year's shearing; and consequently, it would be impossible to free a sheep farm of the disease when once established.

It may be asked then, how is the disease propagated? To which I answer that experience leads to the view that it is the matter, or secretion from diseased sheep, being rubbed on the healthy sheep, when in close contact, that causes the disease, and the *Acarus*, like the itch insect in man, is bred from dirt,—or more accurately, the dirty and unhealthy condition of scabbed sheep is favorable to the developement and growth of the insect,—and doubtless keeps up an irritation in the skin of the sheep, and thus intensifies the disease; consequently the greatest safeguard to the spread of the disease is proper quarantine regulations. We never find scab in sheep without the presence of the insect; and in Australia, where sheep to the number of over one million were slaughtered, and their carcasses and fleeces burned under the inspection of government officials, a great portion of condemned sheep were not scabbed. I allude to this matter, as I find a popular error existing of calling all skin diseases of sheep, scab, where true scab does not exist at all.

There is in Australia a common disease of sheep, very like scab, and only to be distinguished from it by the use of a magnifying glass; it is caused by the seed of a kind of grass, which penetrating the skin, causes irritation and results similar to scab. There are, however, no *Acari* to be found, while the grass seed, in the early stages, may be found in the skin; in the more advanced stages, however, the grass seed comes away with the suppuration, and the disease can only be distinguished by the absence of *Acari*. This disease is not infectious, although affecting whole flocks, simply because exposed to the same cause, and removal to a more suitable feeding range cures the disease.

Of the cure of scab, it is not my object to treat; but I write to lay before your readers the results of my investigation, in order that some may be induced to take up the question, and by varying the conditions, that we may obtain valuable information which would be a guide for legislative interference should a severe epidemic of scab visit this country, as it did Australia, in the years mentioned.

Left-handed Plows.

The Hon. John M. Millikin, of Ohio, in a private letter to "Walks and Talks" writes: "You must permit me to express my surprise to learn that single line horses and left-handed plows are not in general use with you. A farm horse broken to the single line is worth twenty-five per cent more than one of the like quality and value in other respects, not so trained. As for the right-hand two-horse plows I would not accept them as a gift. There are many unquestioned advantages in left-handed plows.

"1st.—*You can plow more land per day or hour*, because the lead-horse walking in the furrow and controlling the off-horse, the width of the furrow is more uniform and regular.

"2nd.—Youths and boys can *make much better work and do more of it*, because the lead-horse moves straight ahead and veers neither to the right or the left. The boy, also, in consequence of the steady movement of the lead-horse in the furrow is less occupied in watching his team and can give more attention to the holding and management of his plow.

"3d.—For the same reasons an inexperienced plowman can do better work and more of it."

In other words, where horses are trained to drive with a single line and the line is attached to the left-side bit of the left-side horse, left-handed plows are better than right-hand plows. This may be all true. But we suppose it is just as easy to train the right-hand horse to answer the line as the left-hand horse, and if this were the case right-hand plows would be best. It seems to depend entirely upon how the horses are trained. If the off-horse is the "lead-horse" we should have right-hand plows; if the nigh horse is the "lead-horse," then we should have left-hand plows. And this seems to be all there is to it. The whole question turns on whether it is best to have the line in the right hand or in the left. The farmers of the South and South-west, in driving wagons, etc., adopt the English custom of walking or sitting on the left side of the wagon, and, we presume, when they meet another team on the road they keep to the left in passing, and not to the right, as we do in the Eastern States. It may be that theirs is the better plan. But we do not see how the change can be brought about here, unless by an Act of Congress declaring that henceforth "all teams in passing each other on the road shall keep to the left; and the left horse shall be considered and is hereby constituted the 'lead-horse.'" We do not think that this is a favorable time to present this matter to Congress. In this section we have no "lead-horse" and can use left-hand plows or right-hand plows as we see fit. Where the left horse is the "lead-horse" it would seem desirable to have him in the furrow, and in this case left-hand plows should be used.

Grazing Mutton Sheep.

As population and the demand for good mutton increases, we shall pay more attention to grazing sheep. As yet, in many parts of the country, this subject is very imperfectly understood. Any one in the habit of reading the English agricultural papers will be struck with the importance attached to rich grazing land, and the efforts made by underdraining, top-dressing, boning, harrowing, etc., to secure a constant supply of nutritious grass. English travelers who visit us express surprise at the poverty of our pastures, and attribute it to the dryness of our climate. We believe that were as much attention paid to our grass land as is done in England, it would be equally productive.

One of the readiest and most profitable means of enriching our grass lands is to graze them with sheep and feed oil-cake, or peas, beans or bran to the sheep while at pasture. As yet we have done scarcely anything in this direction.

When the country was new, land cheap, and population sparse, it might not have paid to adopt this course; but the time has come in many sections of the country when it can be practised with great advantage, and it is important to ascertain what kind of sheep we should select for the purpose. An English farmer, in a recent number of the London Farmer's Magazine, gives his views on this subject. He has "grazed to a considerable extent the following 'half-breeds.' (1) The produce of the Leicester ram and South-Down ewe; (2) the produce of the Lincoln ram and South-Down ewe; (3) the Cotswold ram and South-Down ewe, and (4) the Oxford-Down ram and the Lincoln ewe, and all from equally good sources." If we may take the South-Down ewes as representing our common class of sheep, his experience will be of much interest to the American farmer. In brief, then, he found that the produce of the Lincoln ram was "too varied," "denoting," he says, "the cross to have been too extreme in affinity." The grazing of them, including the weight of wool produced, was tolerably satisfactory; but "they were too long in coming to maturity, 'too long on the land.'"

The Leicester cross were smaller in frame, more compact, and they arrived at maturity much sooner; but their yield of wool and mutton did not equal the Lincoln cross.

The Oxford-Down ram and the Lincoln ewe cross was from his own breeding ewes. "They were grazed last season along with several hundred other half-breeds, principally from the Cotswold and South-Down cross; but not with equally profitable results, some of them being the last to arrive at like maturity, all, however, being fatted off within the year, as were also the Cotswold half-breeds." The Cotswold cross he considers the most valuable, and as he is evidently a farmer of large experience we will quote what he says on this point:

"The true Cotswold sheep is the largest and best formed sheep of the large breeds that we possess, and has a great propensity to fatten at an early age. He grows rapidly, and produces a good fleece of wool, of rather fine character for a long-wooled breed. It is for the most part of a closer kind than other wools. This, with their other characteristics, their noble carriage, expansive chests, rotund frames, capital rumps, great weight, and handsome looks, admirably fits them to become the sires of this extraordinary class or stock of 'half-breeds.' It is almost out of character to witness one of these gigantic rams performing his duties amongst a flock of beautiful South-Down ewes, but the produce is eminently satisfactory. They grow up quickly and healthily, and arrive at great weights in from twelve to fifteen months. Many thousands of these hoggets are annually fattened off in the eastern counties at twelve months."

He thinks this "one of the best breeds for summer grazing." But it should be understood that they must have either a very rich pasture, or be supplied with "cake and corn." In fact, we regard this as one of their great merits. A flock of sheep to which we can *profitably* feed oil-cake during the grazing season will prove of almost inestimable value. The practice would soon give us the best of pastures and in the end enrich the whole farm.

Realizing an Ideal.

Though the farmer is mainly occupied with material things, there is no field of toil where ideas are more important, or work greater changes than the farm. Every one who has cultivated the same acres for a dozen years or more, can see pretty clearly what his ideal has been. If there have been no improvement in the soil, no trees planted, no barns built, no comforts added to the home, no better style of living, the main idea has been animal existence. He has raised potatoes, corn and wheat, beef, butter and pork, and clothed and fed his family, and possibly sent his children out to shift for themselves with as poor views of life as his own. The soil that has yielded him subsistence is no way blessed by his presence. Its capacity to bless others has probably been greatly diminished, and he bequeaths to his successor pastures doub-

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RETURNING FROM THE HUNT.—Drawn by WM. M. CARY.—*Engraved for the American Agriculturist.*

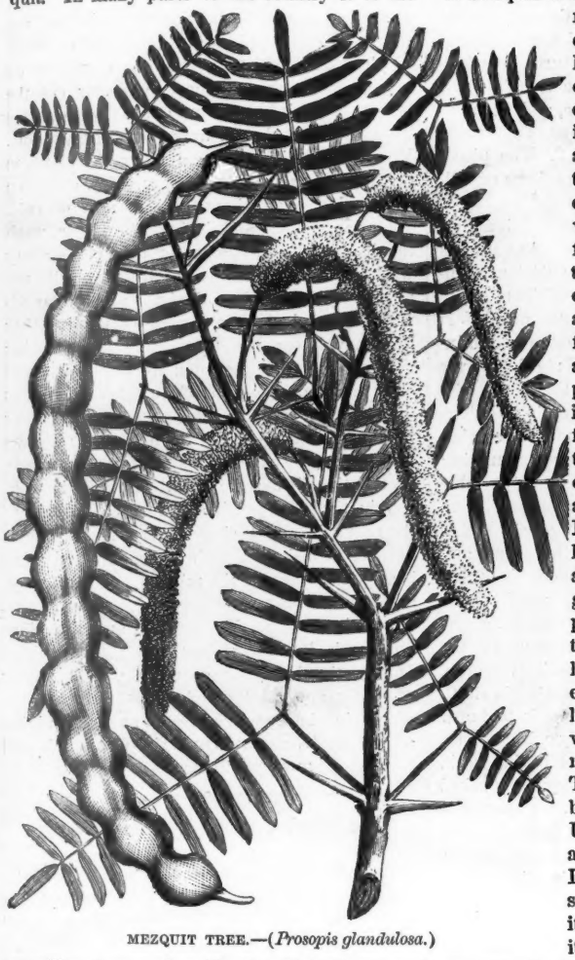
ly cursed by brush and brambles, and meadows seeded with rank growing weeds for the next generation. It is of the highest importance to the man himself, and to society, that he should have something in his mind better than what he sees in his farm, when he takes it in hand. Even if he never fully realize his ideal, he will be striving for it all the while, and will accomplish more for himself and for society. If he get but ten bushels of wheat to the acre he should see thirty just ahead. If he have swales yielding only sour grasses, he should see tiles underneath discharging copious streams at the outlet, and sweet fields of living green above the swelling flood. If he have that vision in his mind it will keep working until it is realized. Every time he mows over that swale he will be thinking of the clover and timothy that might be, instead of the poor stuff he is gathering; of the fat cattle that might be on his ideal fodder, instead of the lean kine that starve and shiver on the bog hay and moss. He will feel a pang akin to the half-fed brutes, and not rest until the tiles are down. If the roads that approach his dwelling are treeless, he should see long rows of elms, maples, or oaks adorning the street. They will be planted by and by. If the wife and mother have hard well-water to wash with, he should see a cistern to catch all the rain from the roof, and a pump to bring it into the room where it will be wanted. There are a multitude of worthy wives suffering discomfort a lifetime for the want of a few practical ideas in the heads of their husbands. Their labors might be made lighter, their whole life brightened if there were conveniences for doing the necessary work of the household. They cost very little time or money, but they do cost a considerable thinking and a little sacrifice of personal ease after the chores are done. To stir up ideas there is nothing better than a good agricultural paper. If the wife is wise she will keep one around when the lamp is lighted.

Returning from the Hunt.

In several drawings that we have published Mr. Cary has given us reminiscences of a far western sojourn. Life upon the frontier presents curious and interesting phases. Here not only do civilization and savage life meet, but they, so to speak, lap over upon and modify one another. The white man picks up much worth knowing from the savage, and the red man is only too apt to adopt all the vices of the white. The result is, that we have at our frontier settlements and far off military posts a people as much unlike the mass of our citizens in character and customs, as are sailors unlike landsmen. In the sketch of "Returning from the Hunt," the artist has represented one of the Penimba half-breeds in his characteristic costume. These Penimbas are a mixture of several Indian tribes, with French, Irish, and other European nationalities, and present a curious combination of the wild and the civilized. These people get a good part of their living by buffalo hunting, going out in parties with small carts built entirely of wood and drawn by a single ox. They encamp in the buffalo region and follow their game upon horseback. When an animal is killed, the meat is cut from the ribs, and the legs disjointed; the remainder of the carcass being left as valueless. This meat is put upon the horse, the saddle strapped down over it, and, mounted thus, the hunter makes his way back to camp. In the present case a cow buffalo has been killed, and the young calf follows the remains of its dead mother. When the buffalo calf has lost its mother, it often helplessly follows the hunter's horse, and in this way is easily captured.

The Mezquit Tree.

Those who have read accounts of travel in Western Texas and the adjacent regions, have noticed the frequent mention made of the Mezquit. In many parts of the country it is the



MEZQUIT TREE.—(*Prosopis glandulosa.*)

prevailing tree, and, without which, these regions could not be traversed with any comfort; as it is often the only resource for both fuel and forage. The tree grows some 30 feet high, and sometimes, where it has a chance to develop, forms a regular spreading head, and resembles at a distance a large apple tree in its outline. More generally, probably from the attacks of insects and the injuries received from the Mistletoe, the tree is irregular in its form. Upon a closer inspection the foliage reminds one of the Honey-Locust, and the presence of strong spines, a pair at the base of each leaf, increases the resemblance. The shape of the leaflets varies considerably, as does their shade of green. The engraving gives the leaves, flowers, and fruit. The flowers are very minute and clustered in small, greenish-yellow spikes. The fruit is a bean, six inches or more in length, straight or somewhat curved. This pod at a certain stage of ripeness, is pulpy. The pulp is very sugary and often of pleasant flavor. At full maturity the pulp becomes dry and spongy, and still retains its saccharine character. The pods form a most acceptable food for horses and cattle, and are found of great service by travelers. The Indians and the poorer Mexicans make use of them to form a kind of *pinole*, a meal obtained by pounding and sifting the pods; this, though sweet, is accompanied by a taste which is nauseous to the civilized palate. The tree exudes a gum, which, in its qualities, is very much like Gum Arabic. It is used as a substitute for that gum by the Mexicans. The sapwood of the Mezquit is yellowish, and the heartwood of a reddish-brown color, as dark as black walnut. It is very hard, and in durability seems to be equal to the wood of the locust. For fuel, nothing can exceed it in excellence; and a bed of live Mezquit coals makes in intensity of heat a near approach to anthracite. Upon the plains, where frequent fires sweep over them, the Mezquit appears only as a shrub a few feet in hight, and an inexperienced person would be in a straight for fuel. The old traveler, however, regards the appearance of a Mezquit bush, however small, as a sign that a good fire is in prospect; and by the use of a grub hoe he soon unearths roots as large as his leg, which make the most perfect fuel. The Mezquit has been proposed, in Utah, we think, as a hedge plant. It certainly possesses many qualities which adapt it to that use, as any one who has ever had the misfortune to lose himself in a thicket of it can testify. Experiments are needed to ascertain how far north it will prove hardy. It will probably be found, as is the case with many other trees, to endure the winters much farther north than where it grows naturally. The Canadian River is the northernmost locality that we have seen mentioned for it. The subject is one worthy the attention of those who live in the South-west, and we shall be glad to hear of the result of any experiments that have been made in this direction. The tree is related to the Honey-Locust, though it belongs in a different suborder. Its systematic name is *Prosopis glandulosa.*

CURRANTS.—A well-known fruit grower once said to us, as we were discussing varieties of currants: "I can take the old Red Dutch, and treating it in my way, get $200 an acre more from it than from any other variety." This seemed a pretty large statement, but upon seeing the result of severe pruning and liberal manuring upon some of our own bushes of Red Dutch, we think it was not much out of the way. This variety is superior to all others in flavor, and with proper treatment will rival them in size. Our friends' "way" is judicious pruning, liberal manuring, and thorough cultivation. With these, this old sort, as well as the White, will attain a development and excellence in marked contrast with the fruit as ordinarily seen.

Bowman's Root, or Indian Physic.

In a large collection of herbaceous perennials, there was nothing which attracted more attention in June than a native plant which has received the rather inelegant name of Bowman's

BOWMAN'S ROOT, OR INDIAN PHYSIC.—(*Gillenia trifoliata.*)

Root or Indian Physic. Its botanical name is *Gillenia trifoliata;* and we think that those who dislike botanical names will prefer to call this plant Gillenia, rather than by either of the English names, which have a strong flavor of the shop. The plant is closely related to the Spiræas, and in its foliage resembles some of them. The stems are two to three feet high, several from a root, of a pleasing reddish color, and clothed with neat, dark-green foliage. The flowers form a large, loose cluster, one of which, much reduced in size, is given in the engraving. The buds are rose-colored, but the flowers are white, with sometimes a tinge of rose color. The appearance of a plant when in flower is extremely pleasing: the colors of foliage and stem produce a fine effect, and the quaint-looking flowers are supported by such slender stalks that at a little distance they appear as if floating in the air. The root is a powerful emetic, and having been more or less used as such, it has received the names we have already given as well as several others having reference to its medicinal properties. The Gillenia is found from New York southward, in woods and on the borders of rivulets. It flourishes better in the soil of the border than we have ever seen it when growing wild, as not having to struggle with other plants, it has a chance to develop its form. It is readily multiplied by dividing the roots, or by seeds, which should be sown as soon as ripe, as they will otherwise be long in germinating.

Cranberry Culture.

"Cranberry Culture, by Joseph J. White, a Practical Grower," is the modest title of a work recently published by Orange Judd & Company. Cranberry culture has developed wonderfully since the time Mr. Eastwood wrote the only considerable treatise we had upon the subject.

Fig. 1.—BILL HOOK.

The present work not only gives instructions drawn from the author's own experience, but presents the practice of the most advanced practical growers. Some who have written upon the subject have left it to be inferred that cranberries would grow almost anywhere. The author states distinctly, and various other growers sustain him—that successful culture can only be carried on where certain conditions are present. Where these are wanting, vines may grow, but their culture will not be profitable. The requisites are muck, sand, and ability to drain the meadow for a foot below the surface, and to flow it at will. Natural bogs are sometimes found which may be improved at a moderate outlay, but the great majority of plantations are made by clearing the swamps and setting out the plants. In many swampy places there are 5 or 6 inches of muck, underlaid by sand, which may be prepared for cranberries by simply plowing under the muck and turning up a layer of sand. In swamps where the muck is deep, sand must be at hand to spread upon the surface. Mr. White gives full directions for preparing the different localities that are naturally available. As summer is the most favorable time for preparing a swamp, we give an outline of Mr. White's directions. The first step is to open a ditch to the depth of 2 feet below the surface of the muck. The bushes are cut down by means of a bill-hook like that shown in figure 1, collected in heaps, and when the leaves have dried, burned. Turfing, or "scalping," is next in order; the whole grassy and weedy surface is to be removed. The turf is cut into strips a foot wide, by the use of a cleaver made for the purpose, and then removed in pieces by means of a turfing-hoe, as shown in figure 2. The pieces of turf are used to make a fence or wall around the plantation. The cost of turfing is $40 per acre, and the hauling off and building the fence costs about as much more. Any stumps which remain are removed. A sufficient number of ditches, to drain all parts of the meadow a foot or 18 inches, are cut, and the meadow is ready for sanding. Sand without any admixture of clay or loam, is spread regularly over the surface of the meadow to the depth of 2 to 6 inches, according to the depth and character of the muck. The sand may be carried on in wheelbarrows running upon plank, or a portable railroad may be used, like that shown in figure 3. Planting is done in the spring, and the different methods of setting the plants are fully discussed and illustrated, as are the after treatment of the meadows, gathering the crop, overcoming insects—in short, all that one needs to know about cranberry culture seems to be contained in this work. As we are frequently asked about flooding, we may state that it is done after vegetation has ceased in autumn, for the protection of the plants during winter, the water being kept on until spring has fairly opened. The meadows are again flooded just before the blossoms open, to destroy the vine-worm. At this time the water is kept on only 24 hours.

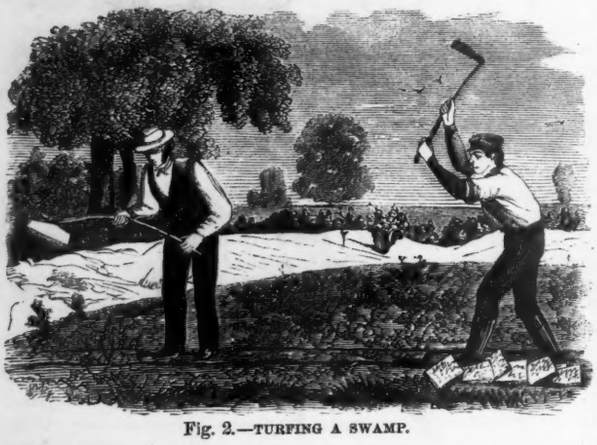


Fig. 2.—TURFING A SWAMP.

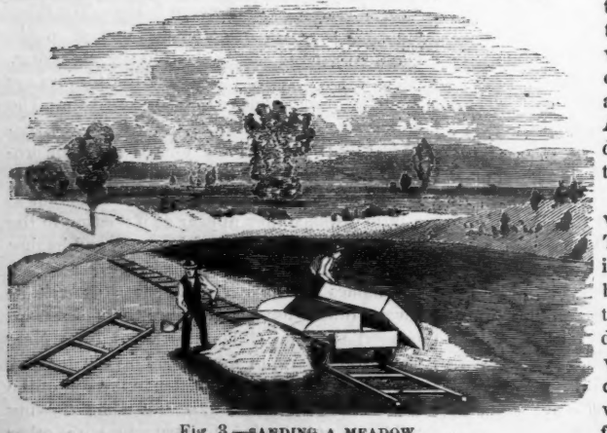


Fig. 3.—SANDING A MEADOW.

Camellias in Window Culture.

Of all the green-house plants grown in window culture, there is none with which the amateur is so generally unsuccessful as the Camellia. All goes well until the buds are beginning to swell, and then they begin to blast and drop, carrying with them the anticipations of the grower. The trouble is a too hot and dry atmosphere. A correspondent, whose abundant bloom last winter we had the pleasure of seeing, writes:

"I have had capital success with Camellias this winter. These are generally failures in the dwelling-house, as the buds drop just about the time they should open. The window of an upper hall was devoted to camellias and a few other plants; twice during the winter the earth in the pots froze, and twice they were removed to a warm room to prevent freezing. In February the buds began to show signs of opening, and such plants as were ready to flower were taken to the dining-room, where they rapidly came into full bloom. One later than the rest has over a dozen flowers on it now (in April). Those who have no green-houses can have Camellias if they will only take a little trouble; and so magnificent a flower is worth a great deal of trouble. Nice, moderate-sized plants can be bought at from $1 to $3, and upwards. Keep the plants out of doors in a shaded place all summer, taking care that they do not get too dry and that no insects eat the leaves. I don't know what one it was, but some "bug" disfigured the leaves of one of my plants. When frosty nights come, remove the plants to the house, to a room without any fire, and keep the window open whenever it is not too cold. Water as needed, and during the winter, wash the leaves with a sponge or soft cloth every week or two. A moderate freezing will not hurt the plants, unless the buds are too far advanced; but it is easy to prevent it altogether by removal to a slightly warmer place during very cold nights. As soon as the buds swell enough to show the color of the petals, the plants may be removed to a sitting-room where their flowers can be enjoyed. Soon after the flowers have fallen, the camellia makes its wood growth. At this time it may be repotted, giving it fresh soil, in the same pot, if a cramped condition of the roots does not show that a larger one is needed. Fresh soil, such as decomposed sods, is as good as any of the mixtures of peat, sand, and other things recommended by the books. Prune into shape, if necessary, and the plant will push its new shoots and grow rapidly. During the time it is growing, give it plenty of water and all the light possible. Set the plants in the open air as soon as frosty nights are over. The treatment is simple enough, and the success most gratifying."

The Twelve-Spotted Squash-Beetle.

Squashes, melons, cucumbers, and in fact, the whole Gourd Family, have a hard time of it in the way of insect attacks. The little "flea" attacks them while in the seed-leaf, then comes the striped-bug, and after these, the disgusting squash-bug; all of these feed upon the leaves, unless the borer comes along, and by going to the root of the matter, destroys the vine outright. To this list we have to add the Twelve-spotted Beetle—*Diabrotica 12-punctata*. We first became acquainted with this pest some ten years ago, in a garden in Michigan. We had, at that time, never heard of it at the East, nor is it mentioned in Harris' Insects. Now it is disastrously abundant in the vicinity of New York, and we have heard more of it this year than in previous ones. The beetle presents a general appearance to the "Lady-birds," or Coccinellas, but it is of a dark yellow color, with twelve roundish black spots upon its wing cases. The engraving shows the insect of about twice its real size. It is closely related to the striped-bug, and a great many times more mischievous; while the plants will soon get strong enough to not mind the striped-bug, this one will attack them when in full vigor, and wherever it goes it makes as clean work as if fire had been among the leaves. This insect is said to be very destructive to the flowers of Dahlias and Asters. We find but little account of its habits in the Entomological works, but know that, excepting the borer, it is the worst enemy that the grower of melons, etc., has to contend with. We know of no remedy save hand-picking. By going over the vines

early in the morning, they are easily captured, but if left until the sun is warm, they take to flight as soon as one approaches. We have found clusters of yellow eggs upon the under surface of the leaves, which we suppose to belong to this insect, at any rate, we thought it would be safe to crush them on suspicion.

The Field Culture of Sage.

BY PETER HENDERSON.

I regret to have to differ with Mr. Gregory, of Marblehead, Mass., on the Culture of Sage, as described in his article in May last; but believing that in our system of culture there is a greater saving of labor, besides being productive of larger crops than the system he recommends, I lay it before your readers. Instead of sowing the seed where the crop is to grow, as Mr. Gregory advises, we sow thickly in beds just as we sow seeds of celery, cabbage, or any other plant that requires transplanting. The space required for the seed is small, compared with the area the crop occupies in the field; and we are careful to prepare the bed for its reception in the best manner, by thorough plowing, harrowing, and raking, until we get a level and even surface on which to sow. After sowing, the beds are deeply but evenly raked, so that the seed is covered an inch or so; we then either roll the beds, or pat down with the back of a spade. The time of sowing the seed with us is about the last week of April or first week of May. I am thus particular in detailing the way of starting the seed, as, unless plump and fresh, it does not germinate freely. The seed is sown about as thickly as we sow cabbage seeds, having them about half an inch apart; of course it is not practicable to do this exactly, but we try to come as near to it as we can. After the plants are half an inch high, the beds are gone over every ten or twelve days, and thoroughly cleared of weeds. By July the Sage will be 3 or 4 inches high, and we then transplant it as a *second crop* on ground that has been previously manured at the rate of 50 tons to the acre, and from which has already been sold our spring crops of Beets, Radishes, Onions, Cabbages, etc. No further manuring is necessary for the Sage crop; all that is necessary is to again break up the ground well by plowing and harrowing.—The Sage is then set out, in rows one foot apart, and 8 or 9 inches between the plants. Now it is in thus transplanting, that I claim that our system saves labor, saves land, and saves manure; for if the seed is sown where it is to grow, as Mr. Gregory does it, every man who has ever grown the crop, knows that it must entail an immense amount of labor to keep the seedlings from getting choked by weeds; for Sage seed is not only slow to germinate, but far slower in growth than most weeds, and must fight a very unequal battle with these sturdy enemies of the gardener for at least two months of the summer; or, until such time as it can cover up the ground and crowd the weeds down, which would not usually be the case before August. But when, as in our case, it is transplanted, we have newly turned up soil to plant in, and the plants are set wide enough apart to allow our small steel rakes to pass between, so that comparatively little labor is needed to keep the crop clean; nothing compared to what it would be were the seeds sown so that the crop would be made without transplanting.

Mr. Gregory may claim that our labor in transplanting is equal to what it would be to clean the seed rows. An acre contains about 50,000 plants, and costs us now about $10 to plant,—say $1.50 a day for men and 50 cts. for boys. An experienced planter, with a boy to drop the plants on the line, will plant 10,000 per day, or about 1,000 plants per hour; this is the average, though I have hands who would plant 1,500 plants per hour. Now unless Mr. Gregory has some way of keeping weeds from growing that we have yet to learn, I can hardly think that it would take less than $50 to keep an acre of his Sage crop (when sown in seed rows,) clean for the six weeks that must intervene before ours is planted out at all, to say nothing of his ground practically lying idle, while ours has been bearing a spring crop. We claim also that this transplanting is better fitted to give a leafy growth and less of stem, than if the plants had not been disturbed; as the temporary check the plant receives tends to make it bush out. Another "kink" in our practice, and a very important one, which Mr. Gregory does not seem to be aware of, and one with which we not only improve our crop in quality, but add double to its weight, is cutting out every alternate row as soon as the ground is covered by the crop. Sown in May, transplanted in July, and set out one foot apart, by the middle of September the ground will be covered entirely, looking like a clover field; allow this mass to grow for another month as it is, and you would not increase the weight of leaves; the plants would grow taller, keeping the green and marketable leaves on the top, but only yellow and withered ones and plenty of woody stems below. But by cutting out every alternate row, the remaining rows are allowed light and air, and in three or four weeks will have spread so as again to cover up the entire surface, *from which half the crop has already been gathered.* We treat Thyme in all respects the same as Sage; and I have seen both these herbs on rich soil not only meet when left 2 feet apart, but when again every other row at 2 feet apart was cut out, almost meet at 4 feet apart.

By this method of cutting out every other row, fully a double crop is taken, and of a quality superior to what it would be were it allowed to grow without being thus thinned out. About 18 years ago I was lucky enough to discover the importance of this plan of doubling our crops of herbs; and as I had not, in those days, began to tell "what I know about gardening," I kept my own counsel for some years before my neighbors discovered the plan.

Nearly all our herbs here are sold in the green state, tied two bunches together, so that they can be hung up in the stores of the butchers and grocers who retail them. One plant usually makes a bunch and a half; the average price is $1 per 100 bunches, and assuming 75,000 bunches to an acre, we thus have $750 gross receipts, which is a low average for highly cultivated grounds. I am often asked, by correspondents at a distance, in relation to the best way of selling herbs in New York City. I will here say, that there is no certain sale that I know of, unless they are in the green state. The season for selling is October, November, and December; and if shipped in open crates, so arranged by divisions of slats, that not more than 8 or 9 inches of a layer would be together, they could be shipped at that cool season to distances requiring fifty or sixty hours in the transit.

ACHYRANTHES LINDENII.—In April last we figured a new bedding plant, *Achyranthes Lindenii.* A trial of it in the open ground proves it to be a most valuable novelty. Its very dark, blackish-purple foliage is unlike that of any other with which we are acquainted. It stands the sun perfectly, and grows well. The figure referred to was taken from a weak green-house specimen, and gives no idea of the erect and robust habit of the plant when grown out doors.

Sulphur for Mildew.

The efficacy of sulphur in destroying and preventing mildew, is now well known, and it is the chief reliance of the vine-grower, whether he cultivates under glass or in the open air. Where sulphuring is systematically followed, it is applied at least three times: just before the blossoming of the vines, after the fruit has set, and when it begins to color; and besides these stated periods it is applied whenever the appearance of mildew indicates that it is necessary. The mode of application, by La Vergne's bellows, we have given in a former volume. The bellows may now be obtained at the implement and seed-stores. The character of the sulphur is of importance, as much of that found in commerce is liable to contain acid, and be injurious to the foliage. An old sulphur refiner writes us, that in refining, much of the sulphur becomes so contaminated with acid, that the India-rubber manufacturers, who use sulphur largely, reject it, and that this acid sulphur finds its way into the market through the wholesale druggists. Sulphur is refined by converting it into vapor by heating, and then condensing the vapors. When the cooling of the sulphur vapor is properly managed, it condenses in the form of the fine powder known as the flowers of sulphur. This process is called subliming. The melting point of sulphur is 258°, and the point at which it takes fire is 302°. If in the process of refining, the sulphur takes fire, sulphurous acid is produced—the fumes which are so disagreeable when sulphur is burned. Sulphur contaminated by acid may be detected by the taste, but a more delicate test is litmus paper. This is paper stained with a blue dye, which turns red when it is touched by acids; it is kept by the druggists. The sulphur to be tested is mixed with a little water and the paper wetted with the liquid. If the least trace of acid be present, it will be indicated by the change in color of the paper. Sometimes sulphur is not sublimed as above described, but the crude lumps are ground to powder in a mill. Sulphur thus prepared is free from acid. The acid sulphur is no doubt injurious to vegetation, and when that free from contamination cannot be procured, it may be purified by washing. The sulphur is placed in a convenient vessel, water poured on, and thoroughly stirred; when the sulphur has settled, the water is poured off. This process is to be repeated with fresh portions of water until the washings, tested with litmus paper, no longer show the presence of acid. The sulphur, being drained, is dried, and, if lumpy, sifted.

A Native Crinum.—(*Crinum Americanum.*)

The exotic species of Crinum are well-known, showy ornaments of hot-houses, and we have one, a native of Florida, which, if not so brilliantly colored as the others, is a very pretty and interesting plant. This spring we received from Mr. C. L. Allen, of Brooklyn, a few bulbs of this Crinum, which allowed us to see it in flower. The flowers are from 6 to 8 inches long, and borne from two to four together at the end of a stalk, which is a foot or more high; they are white, delicate in texture, and fragrant. The

engraving gives a representation of the plant, reduced, of course, in size. This Crinum is a native of the river swamps of Florida, and it will probably be necessary to take up the bulbs at the approach of winter. We shall be very glad if Mr. Allen succeeds in adding this to our list of popular bulbs; aside from the fact that it is a native plant—which we are always pleased to see brought into cultivation—it has merits of its own which will commend it to those who love delicate and modest flowers.

THE AMERICAN CRINUM.

Notes on Strawberries.

In conversation with an experienced strawberry amateur a short time ago, he remarked that we had made no progress in strawberries in ten years—indeed, that our present varieties were not so good as those that were popular ten years ago. Our friend was nearly right; we have allowed many excellent varieties to fall into neglect, and instead, accepted fruit that was either of large size or very productive. The ease with which the Wilson can be raised has caused fruit which required careful cultivation to be discarded; and the enormous size of the Seth Boyden has made us forget the flavor of such varieties as Hovey's Seedling and Hooker. Then again the introduction of such musky varieties as the Triomphe de Gand, which has but little strawberry taste about it, has created a false standard of flavor. We would not be understood as condemning large berries, but size cannot compensate for lack of flavor. The grower for market needs a productive fruit, one that is sufficiently firm to carry well, and of good color and size. The amateur who grows for his own table will be content with fewer berries of a high flavor, and the ability to bear transportation is of no consequence to him. We append a few notes on some of the newer varieties we have grown or have tested this season.

Nicanor.—We fruited this variety on young plants put out last fall, and have seen it on two-year-old plants under the best treatment, and wonder why so little has been said about it. It is vigorous, hardy, and in productiveness it is remarkable, if not unequalled. The berry, though not of the largest, is of good size, a bright scarlet, and of excellent quality. Our illustration, (fig. 1,) is from only a medium-sized berry. Should this variety, in other parts of the country do as well as in the instances referred to, it must become a popular fruit.

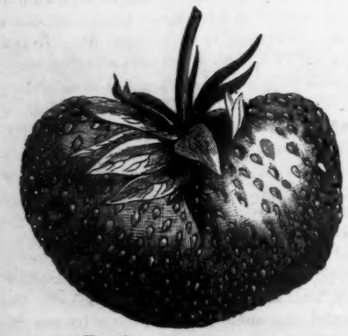


Fig. 3.—LATE PROLIFIC.

Seth Boyden.—This was first exhibited as Boyden's No. 30. Three years ago we described and figured it as "Seth Boyden," and since the death of the originator, this name has been generally adopted. It stands at the head of the large berries, being a good bearer, of a fine shape, and little disposed to cockscomb, and its conspicuous polished neck makes it showy and attractive. It unfortunately lacks flavor and is rather soft, but it is the best large berry yet introduced into general cultivation.

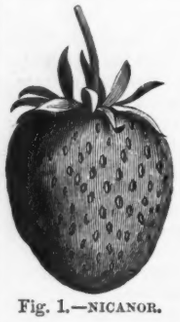


Fig. 1.—NICANOR.

Fig. 2.—RUBIS.

Colfax.—This variety was heralded a year or two ago, as something remarkable. Dr. Hexamer recently exhibited it as the "poorest strawberry ever grown," a statement that both its appearance and taste confirmed.

Late Prolific.—E. W. Durand, Irvington, N. J. This variety took the prize at B. K. Bliss & Sons' Exhibition, as the best variety not before exhibited. It is a cross between Haquin and a seedling of Mr. Durand's, which was itself a cross between Green Prolific and Triomphe de Gand. Hermaphrodite. The foliage is very vigorous, of a dark green, and endures the sun. The fruit of the largest size; obtusely conical, and not inclined to cockscomb. Seeds in medium depressions; surface brilliant, bright crimson; flesh crimson with a few white streaks, very juicy, with a rich, sprightly flavor. On Mr. Durand's grounds this is certainly a very promising berry, but Mr. D. wisely declines to disseminate it until he is thoroughly satisfied that it retains its good qualities. (Fig. 3.)

Rubis.—Mr. Louis Ritz, of San Souci Fruit Farm, Plainville, Ohio, has a remarkable collection of novelties, especially of foreign varieties. He sent us a number of varieties for trial, and though small plants, some of them fruited. One of them, Rubis, pleased us so much that we have figured it, (fig. 2,) though being the product of a plant set out this spring, it cannot do justice in size. This variety originated with Dr. Nicaise, in 1868. The berry is bright scarlet, and very glossy; seeds but little imbedded; flesh rosy-white, solid, juicy sweet, and of excellent flavor. It is not safe to commend a berry with so slight an experience with it, but it is a variety of which we have strong hopes.

Her Majesty is another new sort from Mr. Ritz. The few berries we had were large, of a fine carmine color, and possessing excellent characters, being fine, sweet, and of delicious flavor.

Mexican Everbearing. It will be expected that we shall say something of this bone of contention. We have it growing, and if it is in any important character different from, or better than, the Monthly Alpine, we are unable to see it. Mr. Meehan finds a difference in the young leaves, but as we do not grow the plant for leaves, that has no practical bearing. There are some who fancy Alpine strawberries, and these will be pleased with the Mexican, Autumn Galande, or a half-dozen others, the chief difference in which consists in the name. A pot each of the Mexican and Alpine was exhibited at Bliss & Sons' show, without labels. There were many persons present who are practical strawberry growers, and none of them could see in what particular the plants differed.

Black Defiance.—(Fig. 4.) Another seedling by Mr. Durand, which received the premium at the N. J. State Fair in 1868. It was exhibited at B. K. Bliss & Sons' show, where it attracted much attention by its large size and very dark rich color. This year it has not proved as abundant a bearer as heretofore. Its richness of color and flavor will commend it to the amateur.

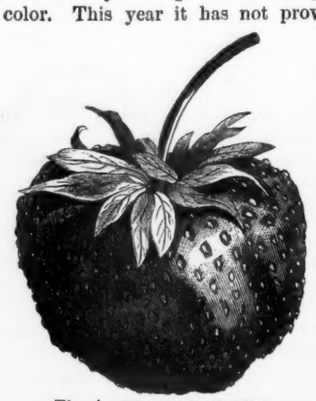


Fig. 4.—BLACK DEFIANCE.

THE HOUSEHOLD.

☞ (For other Household Items, see "Basket" pages.)

Bottling and Corking.

Among household operations that of bottling, including the most important part, corking, is usually carelessly done. With many liquids their preservation depends upon the complete exclusion of the air. Good corks are essential, and those should be selected which have the fewest holes or imperfections in them. The compressibility and elasticity of cork are remarkable; and these qualities, which especially adapt it to its use are qualities which no substitute possesses. In thorough corking, a cork much larger than the neck of the bottle is used, and is driven in with considerable force. A bottle of champagne is a remarkable example of skillful corking. In this the cork is about twice the diameter of the mouth of the bottle, and is compressed and forced in by a powerful machine. In household practice, nothing so complete as this is required. We have recently seen in the House-furnishing establishment of J.

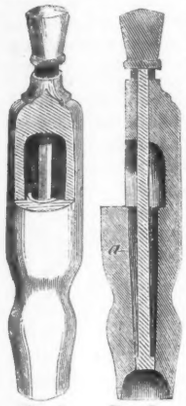


Fig. 1. Fig. 2.

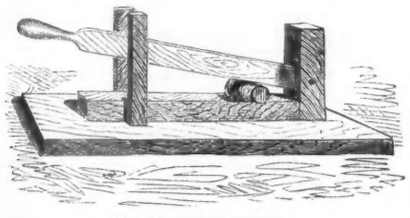


Fig. 3.—CORK PRESS.

H. Baldwin, a German contrivance for compressing the corks in bottling. Its structure and operation will be understood by the inspection of fig. 1, and the section, fig. 2. It is essentially a conical tube with a plunger. The apparatus is set upon the neck of a bottle, the plunger lifted, and a cork introduced at the opening shown in the engraving. —The cork drops into the cavity *a*, figure 2, which, it will be noticed, tapers downwards; it is lined with metal. By striking upon the top of the plunger with a mallet, the cork is driven downwards, and so much compressed in its passage, that it enters the neck of the bottle with ease. Good corks should be procured and soaked in warm water, to render them pliant, and then be pressed and driven in with a wooden driver; a flat piece of heavy wood or a mallet will answer. In filling the bottle it should not be so full that the cork will touch the liquid, as the bottle will be broken in driving the cork. There should be a space of an inch or more between the surface of the liquid and the bottom of the cork; this will prevent breaking. There are cork pressers made of iron, but a simple wooden lever like that shown in figure 3 will answer. If the corks are to be sealed the projecting portion should be cut off even with the neck of the bottle before dipping them in the melted wax. Liquids such as ginger-pop, beer, etc., where there is a pressure from the inside of the bottle, need to have the corks tied down. In this case the projecting portion of the cork is not cut off. There are several kinds of knots used in tying, one of the easiest of which we give. Form a loop as shown in figure 4, then turn up that part of the string *a*, which crosses the loop, as in fig. 5. This is to be placed over the neck of the bottle, and by pulling the ends may be made to fit beneath the lip, as in fig. 6. The two ends are then tied above the cork. Bottles containing liquids if intended to remain a long time, should be laid upon the side, as this prevents the cork from becoming dry and admitting air.

Fig. 4.—LOOP.

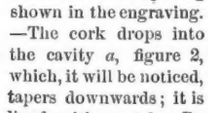


Fig. 5.—TIE.

Fig. 6.—TIE APPLIED.

About Keeping Cool.

BY FAITH ROCHESTER.

Amid the fierce heats of July and August, it seems impossible to "keep cool" always, but with proper care much may be done to make life more tolerable than we usually find it. The whole house should be opened and well aired in the cool, fresh morning, letting in the sunshine for a little while. Everything thrives best with plenty of fresh air and sunshine; but we have to choose between evils in some of the hottest days, and I think we shall prefer shaded rooms that are comfortably cool, to a brighter light and oppressive heat, during the hottest part of the day. Rooms may be kept comparatively cool if they are shaded, beginning early in the day, on the side where the sun's direct rays beat in. If there are no wooden blinds at the windows, thick paper curtains answer very well, and may be drawn down close, if light can be admitted from another side, or they may be raised only while the room is actually occupied. During the busy part of the day our sitting-rooms are often vacant a large part of the time, and they should be guarded from the heat of the kitchen stove. Our comfort depends a good deal upon the "looks" of things. Clean rooms seem warmer in winter and cooler in summer, than untidy ones. The sight of clean muslin or lace curtains refreshes one in summer; and so does the appearance of a fresh muslin or a calico frock, or a "spick-and-span" linen coat and trowsers. A room full of buzzing flies never seems comfortable, but it is not well to keep darkened rooms all summer for the purpose of keeping out flies. Better have netting in the doors and windows, and set fresh fly-traps every day. With clean breezy rooms, netting is hardly *necessary* where mosquitoes are scarce, especially if there are no bad breeding places for flies in drains, compost heaps and out-houses. I don't know much about fly-poisons. We have tried cobalt and fly-paper, but nothing serves us so well as traps, made thus: half fill a tumbler with strong soap suds, and cover it with a thin slice of bread, spread on the under side with molasses; cut a round hole in the middle, smearing its edge with molasses. Set a trap near each window, and knock upon its cover every little while, and down go dozens of victims to a soapy death. Don't let the glass stand long enough to become like the "ointment of the apothecary." Straw matting is more suitable than woolen carpeting for summer. Many prefer it all the year round, with large rugs to lay over it in winter. An instructed taste will prefer clean, bare floors to greasy carpets with untold horrors of dust beneath them. I think Art has not yet done its best for us in the way of floors—at least for dwelling-houses. When it does take hold of the matter, I suspect that *nailed-down* carpets will go out of fashion, to the great advantage of human lungs. It is common in stores and offices, and country schoolhouses to sprinkle the bare floor frequently with cold water, which has a cooling effect on the temperature. A sheet rung out of cold water and hung in a room has the same effect. I suppose the pitcher of ice-water on the table comforts us not only by its cool suggestions to the imagination—as the reading of Kane's Arctic Explorations makes life endurable to some imaginative people when the mercury touches 100° above zero,—and by its effect upon us as we drink, but it constantly produces a cooling effect upon the atmosphere of the room; as nature seeks to produce an equilibrium of heat.

It is on account of this constant tendency to equalize the temperature of different things in the same neighborhood that we choose fabrics for summer wear which will best conduct away the heat of our bodies. The human body, when healthy, varies little from a temperature of 98°, the world over. The atmosphere is seldom so warm as this, so the body is almost constantly parting with its heat; but the internal fires keep up the supply in proportion as they are fed by our diet, pure air, and exercise. When the atmosphere is almost or quite as warm as our bodies, we are uncomfortable, because we cannot part fast enough with the extra warmth produced, and we seek the aid of rapid currents of air, using fans to create artificial breezes. Linen garments, being good conductors of heat, are the coolest when the atmosphere is not higher than blood-heat, or 98°. But for keeping *out* external heat when working in very hot rooms, or in the hottest days of summer, flannel serves best. For this reason we wrap ice in flannel to keep it from melting. How people do sometimes burden themselves with unnecessary clothing! Are the demands of fashion so very imperative? or are the poor human creatures who go loaded down with broadcloth, or heavy silks and rich shawls, so stupid that they don't know how to be comfortable? Thin lawns and muslins, white or of light tints, are the coolest ladies' fabrics—comfortable alike to wearer and beholder. A fresh calico frock is cooler than one of silk or worsted, and is always in good taste. Close bands at the neck and wrists add to the warmth of a garment. A lace collar, or bit of lace sewed in the neck of a dress, is more comfortable than a linen collar. Dressed in clean, airy garments, and sitting at leisure in rooms from which the glaring sunshine is excluded, with cool lace or muslin curtains at the windows, and with sprays of delicate flowers and trailing vines in vases on table and mantels, with a dewy pitcher of ice-water, or iced-lemonade ready for any thirsty one, and with fans conveniently disposed, a reasonable person ought not to complain of the heat.

But, in the kitchen, and in the hay-field? Our good old friend, the cook-stove, has the aspect of a demon in such weather. If possible, the cooking ought to be turned out of doors with the coming of summer. If the regular occupant of the kitchen, with its reservoir and roasting oven, is too heavy or too precious to be removed to the woodshed or back "stoop," a cheap second-hand stove could be made to do most of the ordinary work, and a small charcoal furnace would boil the tea-kettle and heat the flat-irons. One summer, our cook-room was a rough shed, with a wall on only one side (the wall of the house) and we never enjoyed the necessary work over a cook-stove so well before nor since. There are few women that would n't like to hear the birds sing while getting breakfast. It is bad enough to have a hot stove in a room where the exercise of house-work is mainly taken; but it is quite too bad if those who have been busy in preparing the dinner, and those who have just come in from the sweltering harvest-field, must sit down to their meal in proximity to a raging fire. Better dine in the parlor if that is the only alternative.

If the poor people who can't get a comfortable breath of air while they eat, attempt to satisfy their hunger with the most heating kinds of food—as fat, starch, and sugar, or their compounds, how can they reasonably pray for comfort? The experience of all observing people corroborates the testimony of Chemistry and Physiology with respect to the effects of different kinds of food in heating or nourishing the body. In animal food the fat contributes little except heat; the lean part being that which builds up the body and gives strength. In the wheat kernel the inner portion which makes the fine, white flour, is largely carbon, in the form of starch; while the muscle-making, strength-producing portion of darker color lies between this and the woody bran, and is nearly all sifted out in the

bolting of the flour, and fed to the cattle. Unbolted wheat flour contains all the elements needed by the body. Fine, white flour, so highly prized by ignorant house-keepers, contributes scarcely anything but fuel for the burning-up of worn-out particles of the body. Just think then of the absurdity, on a hot July or August day, of such a dinner as is common among farmers, consisting of fried pork (fat, nearly all carbon or *fuel*); potatoes (nearly all starch, or fuel for combustion); bread made of fine, wheat flour (starch, or fuel); butter (which is the oily, or carbonaceous portion of milk, that, if taken whole, contains all the elements of the body); pie (whose crust is indigestible fine flour and fat); and suppose we add to this hot coffee!

Think of this combination for a "tea!" fine, flour bread, perhaps "hot, shortened biscuit;" butter; fine crackers; rich cakes and cookies; sweetened preserves, or highly sweetened sauces of any kind; hot tea. How unreasonable! Bread made of unbolted, wheat flour, lean meat, fresh vegetables, and fresh fruits, are the best articles for summer diet. Butter is not a necessity, but do not think to substitute molasses, for that is quite as heating. A great many sensible folks give sincere thanks for a supper of unbolted wheat "gems," with good apple-sauce, or eat with keen relish and an intelligent expectation of benefit, "wheaten grits" boiled soft, with strawberries and other fruits. The melons and berries and tree fruits that come with the season, are wholesome and comforting articles of summer diet, *if taken as food at meal times.* Hot food and hot drinks always raise the bodily temperature. Hearty dinners might often be taken cold as well as hot in summer. Cold meats sliced, cold beans or peas, cold puddings (not too starchy nor too sweet), and if tea or coffee must be had, they may be taken cold. Use *very* cold drinks with moderation; they are not best taken with food; as they lower the temperature of the stomach below the point necessary for good digestion.

Some folks shut all their doors and windows at nightfall, because they think the night air is injurious. Such a supposition implies a doubt of the Creator's wisdom; for what air is it natural for us to breathe in the night if not the air of night? The experience of soldiers shows how groundless is this whim. It is a great comfort to let in the cool, evening air, after a very warm day, especially if it can be done without filling the room with insects. Persons with delicate lungs or weak bowels must observe the change and guard against taking cold. Many cases of cholera-infantum have been caused by carelessly allowing children to go without sufficient clothing over the bowels and lower limbs in the cool mornings and evenings.

P. S.—Through some mistake, the pattern for baby's wrapper in the June number was drawn too low in the neck on the back. Any person of experience would know that it should be cut nearly straight across, or only slightly curved on the back of the neck. The band with straps opens in front.

Cooking Tomatoes.

The tomato is a vegetable that is difficult to spoil, and it is generally acceptable even when rudely cooked. It is capable of so much change in the cooking as to afford a pleasing variety. One way of stewing tomatoes is to choose very ripe ones, skin, and slice, rejecting any hard parts. Put in a pan with salt, butter, and pepper, and cook very slightly, not more than ten minutes. Another way is to stew the tomatoes until thoroughly soft, rub them through a sieve, and then cook them down to the desired thickness. Butter, salt, and pepper, are the usual seasoning. Those fond of the flavor of onions will find the addition of chopped onions while cooking, to make an excellent variety. Baked tomatoes are fine. Choose large fruit, and cut out a cavity at the stem end; fill this with a mixture of powdered cracker or bread crums, butter, salt, or other seasoning, set on a pan and bake until done. If managed carefully, the tomatoes retain their shape. Tomatoes may be broiled; cut them in halves crosswise and put them cut-side down, upon a gridiron over the fire. When the cut surface is seared, turn them and put butter, salt, etc., on each, and cook with the skin side down until done.

Poisonous Hair Dyes and Cosmetics.

Several cases of lead palsy having been traced to the use of a cosmetic called the "Bloom of Youth," the Board of Health of New York, directed Dr. C. F. Chandler, its chemist, to make an analysis of the various toilet preparations in general use. He gives an analysis of sixteen different hair dyes, all but one of which contain lead in varying proportions. The following statement from the official report shows the grains of lead contained in one fluid ounce of each.

1. Clark's Distilled Restorative for the Hair	0.11
2. Chevalier's Life for the Hair	1.02
3. Circassian Hair Rejuvenator	2.71
4. Ayer's Hair Vigor	2.89
5. Prof. Wood's Hair Restorative	3.08
6. Dr. J. J. O'Brien's Hair Restorer of America	3.28
7. Gray's Celebrated Hair Restorative	3.39
8. Phalon's Vitalia	4.69
9. Ring's Vegetable Ambrosia	5.00
10. Mrs. L. A. Allen's World Hair Restorer	5.57
11. L. Knittel's Indian Hair Tonique	6.29
12. Hall's Vegetable Sicilian Hair Renewer	7.13
13. Dr. Zebbett's Physiological Hair Regenerator	7.44
14. Martha Washington Hair Restorative	9.80
15. Singer's Hair Restorative	16.39

Six Lotions or washes for the complexion were analyzed, in none of which poisonous metals were found, excepting Perry's Moth and Freckle Lotion, which contained both Mercury and Zinc. Seven Enamels for the skin were examined, three of which contained carbonate of Lead, or White Lead. These were "Eugenie's Favorite," "Snow-white Enamel," and "Snow-white Oriental Cream." Seven white powders for the skin were examined which were found to be as harmless as any other form of dirt. The Report concludes as follows: "It appears from the foregoing, 1. The Hair Tonics, Washes and Restoratives contain lead in considerable quantities; that they owe their action to this metal, and that they are consequently highly dangerous to the health of the persons using them.

2. With the single exception of Perry's Moth and Freckle Lotion, which contains corrosive sublimate, the Lotions for the skin are free from lead and other injurious metals.

3. That the enamels are composed of either the carbonate of lime, oxide of zinc, or carbonate of lead suspended in water. The first two classes of enamels are comparatively harmless, as harmless as any other white dirt when plastered over the skin to close its pores and prevent its healthy action. On the other hand, the enamels composed of carbonate of lead are highly dangerous, and their use is very certain to produce disastrous results to those who patronize them.

4. The white powders for the skin are harmless, except in so far as their application may interfere with the healthy action of the skin."

This report is so eloquent in facts that it is unnecessary to add any comments. If people will dye their hair and bedaub their skins it is well to know the nature of the materials they are using.

Graham Mush.—Faith Rochester says: Does anybody want to know how to make Graham mush? There are people who raise the best of wheat, year after year, and live on fine flour always, and have no idea how sweet, as well as healthful, the unbolted, or Graham flour is. Make Graham mush as you do corn-meal hasty-pudding, sifting the meal with your hand slowly into boiling water, stirring briskly meanwhile. A few minutes' boiling seems to cook it sufficiently, though many cook it longer. Sweetened cream is an excellent dressing for it, and then if you add fresh berries!—well, just try it! Many persons like it with unsweetened cream or milk, as they eat hasty-pudding. Wheaten grits are usually bought in paper parcels with directions for cooking. They are the wheat kernels with the outer woody fiber stripped off; and are excellent, especially for persons with inflamed stomachs who cannot bear the bran of Graham.

How to use Canaille.

The request of a correspondent for information upon the use of Canaille, has brought out several answers. We give the following from "J. G. C.," Knoxville, Tenn.—There are several ways in which Canaille, or wheat shorts (or midlings, as it is termed by some), can be prepared as food, each of which will be found both palatable and acceptable.

Bread and Biscuit.—Mixed with an equal part of wheat flour it makes a nice, wholesome bread, a little dark colored perhaps, but light, spongy, and sweet.—It also makes most excellent biscuit, which, if served up before they are entirely cold, and with butter and honey, will be found very fine.—Mixed with a little Indian meal it makes superior griddle cakes, if served hot.

Canaille Pudding.—Take sour milk, a little saleratus, and if the milk is not pretty sour, a little cream of tartar, a couple of eggs, and canaille stirred in until the batter is a little too stiff for plain cake, bake in any convenient dish, in a rather slow oven, serve hot with hard or wine sauce.

Hints on Cooking, Etc.

Water-Ices.—These are an agreeable change from ice-cream, and are by many considered preferable to it. They may be made from any juicy fresh fruit, or various flavors may be given without the use of fruit. Pine-apple, Orange, Raspberry, and Currant, are the fruits most commonly used. A syrup is made in the proportion of one pound of the best white sugar to a pint of water. If the sugar is clean, this will need no straining or clarifying. Equal parts of this syrup and fruit juice are used and frozen in the same manner as ice-cream. In freezing, water-ices require more thorough stirring than ice-cream, to prevent them from becoming lumpy. The addition of lemon juice will improve the flavor of pine-apple and other water-ices from fruits that do not contain much natural acidity.

Raw Tomatoes.—The almost universal popularity of the tomato has led to a great variety of ways of eating it. Probably more are consumed raw than in any other way. The manner of dressing them varies greatly. Some use only vinegar and salt. Others, vinegar, salt and oil, and others again, vinegar and sugar. We often see them served with a regular salad dressing, but the general way is to place them upon the table plain, and allow each one to prepare them to suit his own fancy. They are usually sliced with their skins on, but those who are very particular about such matters scald and peel them before slicing, and the slices are put with pieces of ice to cool them and restore their firmness. Tomatoes when eaten raw show the qualities of the different varieties better than when cooked.

Pickles.—J. M. Fleming sends the following: "Pick each morning, and put into weak brine, allowing them to remain three or four days, or long enough to become sufficiently salt for use, putting in mustard pods and horseradish leaves to keep them green. Then take out and drain, and cover with good vinegar for a week, at which time take out again, drain, and put into fresh vinegar, adding mustard seed, ginger root, cloves, pepper, and red pepper pods—about one or two ounces each to the barrel, or to suit taste. The pickles will be nice and brittle, and pass muster at any table. Put on the vinegar cold, and add the spices as desired; but the vinegar must be changed once, as the large amount of water in the cucumbers so reduces the vinegar that this change is absolutely necessary; and if they should lose their sharp taste, just add a little molasses or spirits, and they will be right again. Mrs. F. put hers up in this manner last season, and we never had so good pickles; they were always ready for use, and kept well.

Fruit Salads.—This is a term given by Europeans to mixtures of fresh fruit dressed with sugar, with or without wine, and a little cinnamon. Raspberries and currants together, and peaches and dried oranges separately, are prepared in this way.

BOYS & GIRLS' COLUMNS.

The Latest Street Toy.

I have told you, boys and girls, that lots of toys are sold along the streets. They come thickest just about Christmas, but the approach of Fourth of July brings out some too. These, in keeping with the season, are of a kind that go off with a pop or a bang. Last year it was a little gun for shooting torpedoes, and this year the latest toy makes noise enough to satisfy the most patriotic. It is only a pop-gun. The original pop-gun was a quill with a wooden rammer, and a slice of potato for wadding. We used to cut out a pellet of potato by pushing the quill through it, and push the pellet a short way into the quill: then another pellet of potato was cut out and pushed with the rammer. The air between the two pieces of potato was squeezed into a small space, and when the other piece could no longer resist the pressure, out it went with a pop. An improvement on this was a wooden tube with a rammer, furnished at the end with a piece of leather, which made it fit closely to the tube. This went in at one end and the other was stopped by a cork. The rammer being thrust in, compressed the air just as was done between the two pieces of potato, and the cork would be driven out with a loud pop. This new toy that I was speaking of is an improvement on this. It is an iron tube with a close-fitting rammer, but instead of the further end being stopped by a cork, it is closed by a piece of writing paper which is held on by an easily fastened ring, which clamps it closely to the end of the tube. The rammer being smartly pushed down, the paper bursts with a bang as loud as a small pistol. Here is a chance to celebrate our noisy holidays without any smoke or smell of powder, and no danger of getting burned. I don't know how the boys will like it, for I used to think that the smell of the powder was half the fun; but parents will be largely in favor of having the noise, if noise must be made, without the risk that attends crackers, double-headers, and fire arms.

WILL WARREN.

Among the Spice Islands.

BY "CARLETON."

A few months ago I was far away on the other side of the globe—wandering over some of the islands from which we obtain pimento, cloves, nutmeg and cinnamon. It was delightful to sail along their evergreen shores, with soft breezes fanning my cheeks, and inhale the delicious odors wafted from forests blooming with myriads of fragrant flowers; to look into inlets, bays and sheltered coves, where the waves rippled on pebbly beaches, and where palm-trees reared their tall trunks and waved their green plumes in the balmy air.

Open your Atlas to Asia and you will see Sumatra, Java, Borneo, and hundreds of smaller islands in the Indian Archipelago, from whence we obtain our spices.

Day after day our steamer plowed its way through the calm waters, and I beheld entrancing scenes, and at night I looked out upon a sea of fire! Many of the boys and girls that live in the country probably never have had an opportunity of seeing the beautiful phosphorescent light that sparkles on the waves of the ocean, and which is so brilliant in the tropical regions that when night comes on, the water seems to be on the point of bursting into flame.

I shall never forget one evening when we came to anchor under the lee of an island off the coast of Malacca. The stars were shining, but the night was dark, and our vessel as it glided along turned up a great furrow that reached miles away; it widened on one side far out to sea, and on the other broke in waves of light against the shore. When the anchor went down into the water a sudden flash of light spread out in circles over the glassy surface of the sea. The native boatmen as soon as they heard it drop, launched their light canoes and came off to see us. Long before they reached the ship—long before their dusky forms could be distinguished through the growing darkness, we saw the water changing to fire with every dip of their oars. As I looked over the side of the vessel I saw innumerable lines of light beneath the surface, winding swiftly here and there, now circling round the ship, now diving beneath it and coming up the other side. Sometimes one line chased another, and then the two went in zigzags or turned sharp corners. There were numerous sparks of fire and they all seemed to be playing tag! The fishes did all this.

What a fish story! I do not wonder that you say so, but it is true for all that. It seemed as if each fish carried a lighted match in his mouth! A shower came on and every rain drop as it touched the water seemed changed to fire! It was a wonderful sight. In the morning I jumped into one of the little boats and the copper-colored, black-haired native with a paddle shaped like a mustard spoon, took me to the shore and I wandered into the dark forest where the tall trees threw out stout branches and locked arms with their neighbors, and formed a green roof over my head. A monkey sitting on one of the branches showed his teeth at me. Another hopped down from a high limb and made up a face. A third screamed as loud as he could, which probably was a signal cry; for a whole troop came hopping from limb to limb, yelling, grinning and chattering. Not understanding the monkey language, I don't know precisely what they said, but am pretty sure that they were making fun of me; perhaps to pay me off for making fun of those of their race that come to this country in company with the organ grinders, and who wear their little straw hats on one side in imitation of some young men I know of. Besides the monkeys, there were parrots, macaws, and birds-of-paradise, with brilliant plumage, making the forest ring with their singing, only their songs are not near so sweet as those of the lark, the thrush, or the robin. Birds in the tropics are not such fine songsters as those that build their nests in our orchards and gardens.

But a tropical forest is a wonderful thing to see. Parasitic plants, like the mistletoe, which do not draw their nourishment from the ground, but from a tree, hang in dark masses, or droop in graceful festoons from the bending limbs; others cling to the rough bark, and twine round the gigantic trunks; and rattans, not larger than a whip-stick, wind up to the highest branches, then run along the interlaced limbs from tree to tree. The monkeys gather upon them in groups, and swing to and fro like children in a swing. The forest was dark and gloomy, for the leaves of the palms are so broad that they almost shut out the sunshine. Only think of a leaf being large enough for an umbrella! The men who sell pine-apples and mangoes in the villages put up one for a booth and sit beneath it through the day, and sleep under it at night. It is sufficient to protect them from the sun or rain. You will think it a big story perhaps, but the leaves of the "fan palm" are ten feet long and three feet wide! Walking up a winding path I came to the nutmeg groves and the pepper orchards. Did you ever think when you were sprinkling pepper on your food that it came from those distant islands? Yet there were the groves from which the berry is gathered. A spicy flavor pervaded all the islands, so delicious that I felt like lying down beneath the shade and doing nothing. There is no better place in the world for lazy folks. The people wear few clothes and food does not cost much. There is no winter, spring nor autumn, but always summer. After all, I should not like to live there, I had rather reside in America where we have all the four seasons. Besides, they have the Cobra—a snake so poisonous that if one were to bite me I should not live fifteen minutes. And they have Anacondas in the jungles,—twenty or thirty feet long, that would break every bone in my body or swallow me whole. Ugh!

The fire-flies, or "lightning-bugs," as I used to call them in my younger days, that buzz about our ears at night on these islands, are very large and give out a great deal of light. A half-dozen of them will keep a room well lighted; and some of the natives put them into glass bottles and use them instead of candles or lamps. The women not being rich enough to own jewels, wear fire-flies, instead, when they go to a dance. Their dances are usually held in the open air. It must be a very curious sight to see a party of ladies whirling round with lightning bugs flashing in their long, black hair! The swamps and thickets present a beautiful and enchanting scene at night when the myriads of bugs are flying about among the mangrove-trees. They keep up a constant flashing from sunset until daybreak. If you are standing during the evening by the ocean shore, both the water and the land seem to be on fire—just ready to burst into flame, and you wonder if the world is n't going to be burned up! Our black-haired boatman rows us over the calm waters, and we look down into them and behold a forest of pure white coral which the little animals are building slowly through the years. We see green and crimson, purple and violet shells lying on the bottom. And there are dark green weeds and delicate, moss-like plants growing on the rocks. We are never weary of looking at the beautiful scenes around and beneath us, whether we behold them by night or by day.

Gutta-percha-trees grow on these islands. The natives tap them just as we do our sugar maples. They evaporate the sap in the sun until it is about as thick as tar, when it is very sticky. They use it advantageously in trapping tigers. You wonder, I dare say, how they can catch such ferocious beasts with gutta-percha. There are a great many tigers in the forests, so bold that they sometimes come into the villages and carry off the inhabitants who are not very well supplied with guns. One way of catching them is by digging pits and covering them with brush, and baiting the tiger by tying pigs or goats near by. When the tiger gives a spring to catch the poor trembling animal, he goes down through the brush to the bottom of the pit which is so deep that he cannot get out. Sometimes they set a gun near the bait, and when the beast comes up to get his breakfast he touches a string which pulls the trigger, and receives two or three, or may be a half-dozen bullets in his body. But another way of catching them is by using the gutta-percha. A pig is tied to a tree in the jungle, and the gutta-percha spread upon the ground around it. When piggy is hungry he begins to squeal; and the tiger sniffing a good dinner, creeps up like a cat through the bushes, cautiously and stealthily crawling on his belly over the leaves. He comes nearer and nearer, his mouth wide open, his eyes flashing fire. He gives a leap through the air, and falls plump into the gutta-percha. He has killed the pig by a gentle pat of his paw, but in trying to eat him, he gets the sticky stuff into his mouth. In a short time his jaws, tongue, and teeth are daubed with it. He rubs his mouth with his paws and gets it into his eyes. It is not long before they are glued together so that he cannot see. He growls more fiercely and lashes his tail. He tries to walk, but there is a great mat of leaves sticking to each foot. He rolls over and roars in rage. The natives are on the watch, and all hands rush out from the villages with shouts and hurrahs, and with guns and spears quickly despatch him. They take off his skin and carry it back in triumph, kill a pig, make a feast, dance all night, and have great rejoicing over the capture of the beast which they dread above all others.

About Puzzles and Problems.

A large number of our young friends have sent us puzzles, rebuses, and the like, and probably have wondered why they were not published. We wish to thank those who have forwarded them and to make a general acknowledgement of those we have used and those we have not. As to those which we have not published there are several reasons for withholding them. Some of them are very well known ones, others are not good enough, and some of the arithmetical ones are too difficult. It must be borne in mind that the object of such things is to afford amusement and not to propound difficult tasks in algebra. Our young friends generally fail in their attempts at making rebuses, and we have not had a really good one sent us in a long time. It takes a peculiar talent to make a first-class rebus. The way to succeed is to keep on trying.

A Snake Levee.—Such a time with the snakes! Our artist was out one spring morning and came upon a gathering of water-snakes, like the one represented in the picture. The snakes had just come out from their winter hiding-places, and were evidently holding a mass meeting. Whether they were discussing snake rights, which watering-place they should visit for the summer, we do not know, but the squirming and twisting and hissing he describes as having been remarkable.

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"THE BOOK OF LIFE."—FROM A PAINTING BY G. POPE.—*Drawn and Engraved for the American Agriculturist.*

Here is a picture that tells its own story so plainly that there is but little need of explanation. The little one is allowed to look into the great family Bible under the care of her larger sister. Most of the older boys and girls can recollect what a treat it was, when they were too young to read, to look at the pictures in the Bible and to have some older persons explain the sacred scenes and incidents they illustrated. Long before young people can comprehend its higher teachings, the narratives of the Bible, such as Abraham and Isaac, Joseph and his Brethren, and many others, have a great charm for them. Many of these portions afford subjects for beautiful pictures, and by the use of these, children learn much of sacred history, and not only this, they receive from them impressions of the manners and customs of eastern countries, which, in after life, are never obliterated. A well-preserved, old family Bible is a most interesting book. Infants have turned its pages with wonder, and the aged have gone to it for consolation. It contains usually the record of births and deaths for generations, and is often the only link connecting us with our ancestors. The artist has well called his picture the "Book of Life;" for the children are looking at a book to which this title applies, not only in its higher sense, but for the reason that there is no book which is so closely connected with all the various phases of our lives from early youth to old age.

Going into the Country.

Such fun for boys and girls who live in cities and villages to go into the country in this heated month of August! Winter is the time that young country folks visit the city, but now the current runs the other way. Both visitors and those who are visited can do much to make the occasion pleasant. It is too often the case that we are glad when visitors leave, because they do not take to our ways, and make us feel all the time that they are different from us, even if they do not consider themselves superior. Good-hearted boys and girls will try to adapt themselves to the customs of those whom they visit. If the ways of living are different from those you are used to at home, do not remark it. City people can make themselves very disagreeable by constantly informing their country friends that they do such and such things very differently in the city. Country children again must recollect that their city visitors are not used to many things that are every-day matters with them. If they cannot get over fences, climb a tree as readily, or endure as much fatigue as you can, do not make fun of them, but show them how to do the things that they seldom have a chance to try. Recollect, if city boys and girls visit you who live in the country, that what is perfectly familiar to you is quite new to them. Many of them never saw a spring sending its cool water up from its bed—never saw what kind of a bush huckleberries grow on, never knew how checkerberries grow—these and many other things will be quite as interesting to them as city sights are to you. Tell them the names of the different birds and let them know what ones the different songs are made by. Show them where the barn swallows build, and the big hornet's nest, that is to be treated with respect. There are so many things that you can do to entertain your friends if you go about it with the right spirit!—Then you, who are visitors, learn to use your eyes, and don't be ashamed to ask questions. You read the travels of Carleton and others, and wonder how they could have learned so much. Simply by the means we advise you to employ. Use your eyes and ask questions. When you return to the city, you too will have a story to tell, and we trust that you and your friends, who live in the country, will have enjoyed your summer's visit so much that you will be glad to repeat it another year.

Taken at his Word.

A good story is told of King Louis XIV., of France. It is said that at a state dinner, the courtiers, as was the custom, gathered around the table to see the grace with which his majesty picked the wing of a pheasant. One among them named Dominique, was a great wag, and very fond of good things. He was looking with longing eyes at some partridges which were upon the table in a gold dish. The king noticed Dominique's attention to the partridges and said good humoredly, "Give that dish to Dominique." "Really, sire, and the partridges too?" replied the ready Dominique. The king for a moment was astonished, but amused at the fellow's impudence, replied—"Yes, and the partridges too."

Answers to Problems and Puzzles.

386.—All instinct independent of reason teaches that our foes are to be avoided.—Awl-in-stinct in D pendent of reas on tea-chest-hat-our-F O's-R-toe-bec-avoided.

387.—If on the sudden he begins to rise, no man that lives can count his enemies.—If on tea he sudden-he-beg in S-toe-R eyes-gnome ant hat-L IV'S-can-cow-nt-H eyes N M eyes.

388.—The boy was 16 years old.

389.—The letter was for I. Underwood, Andover, Mass.

390.—He hitches two horses to the mill and grinds one bushel, then he takes out one horse and puts in another and grinds one bushel; one horse has now ground two bushels, he is unhitched and the one that has already ground one bushel is put in his place, and the remaining bushel is ground. Each horse grinds two bushels.

The following have sent correct answers. Herbert Goodell, R. A. Smith, Emma and Janie Hays, E. S. Vacher, E. Cadwallader, C. A. Sibert, L. Harper, L. E. Shriver, W. C. Eveleth, E. H. Denny, "E. P. W.," F. W. Hall, J. H. Barnes, F. A. Johnson, Harry S. Brown, C. H. Smith, "Kon," J. D. Delop, Belle M. Dun, Belle M. Sheppard, L. E. Ettinge, J. N. Chingan, Geo. Shearer, C. F. Deibeit, Annie E. Lafferty, Alex. L. Rugbert, H. Hamblin, H. S. Pope, J. M. Walker, J. L. Terry, Chas. C. Latta, Marion B. Kautz, Mrs. G. T. Jenkerman, J. E. Tallman, M. Richardson, J. H. Arner, M. N. Whiteford, G. W. Morse, C. T. Wakefield, I. Shaver. Some of the above names are rather uncommon ones, and we fear that we have not read all of them correctly. Most persons write their signature more indistinctly than they do anything else. T, I and J are often made too much alike.

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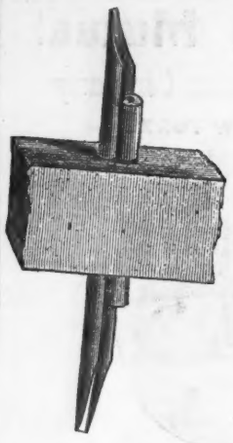

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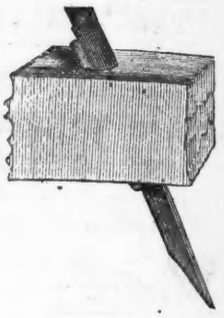

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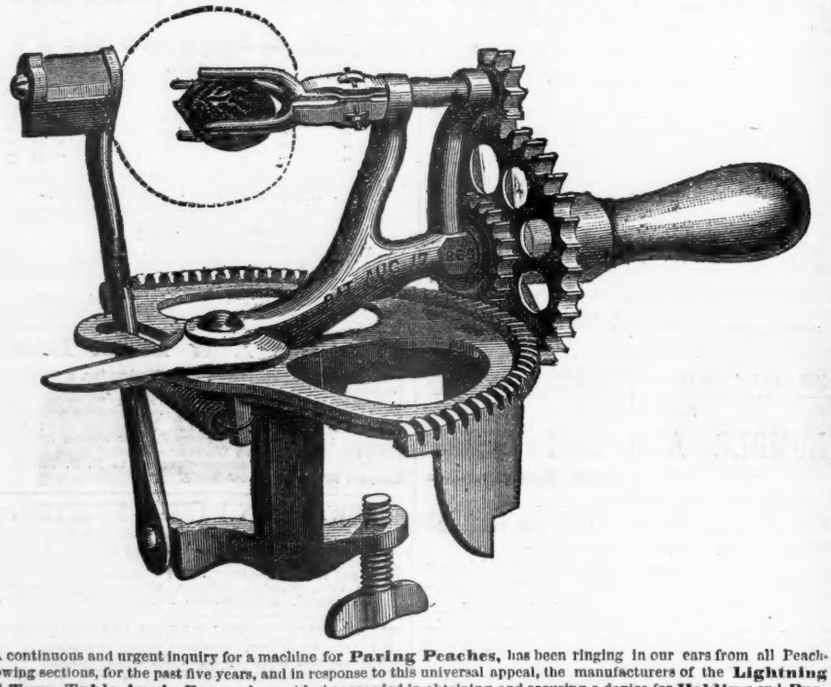

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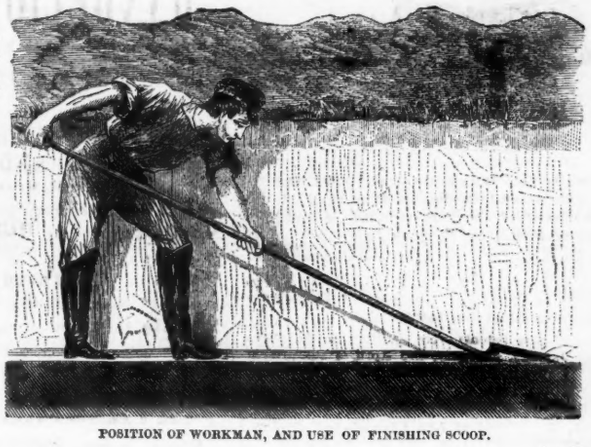

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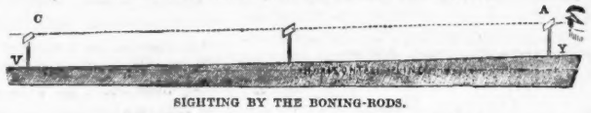

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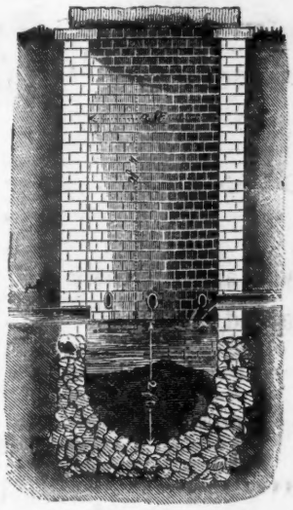

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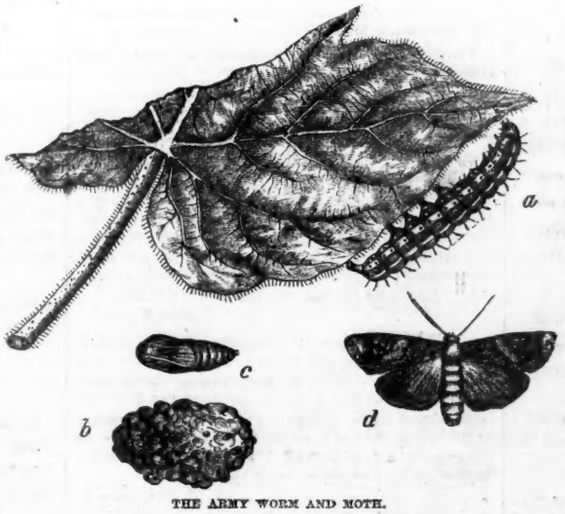

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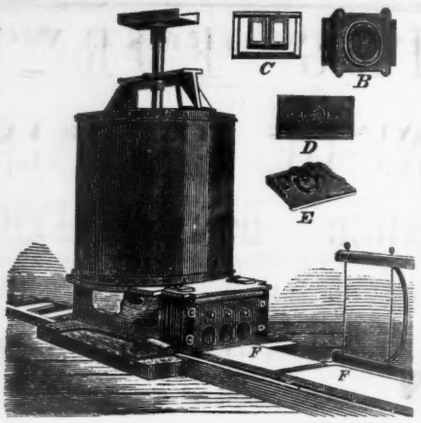

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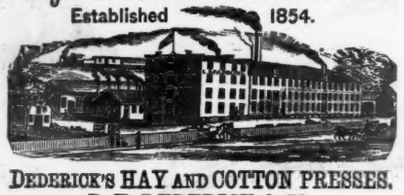

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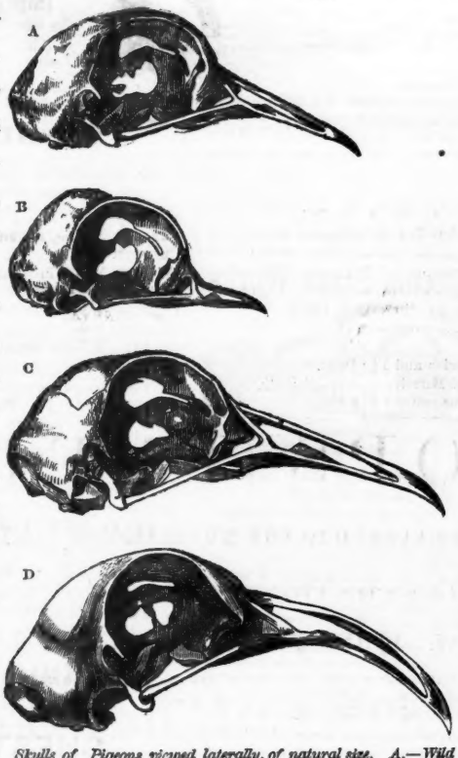

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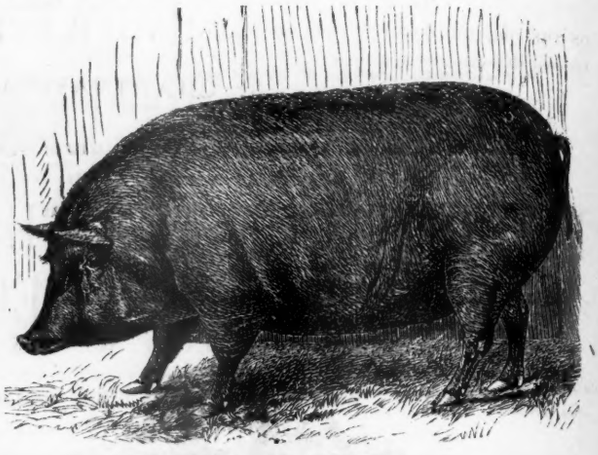

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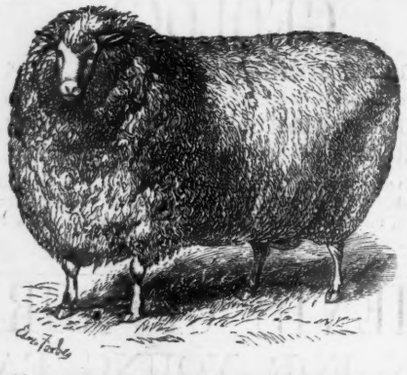

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